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 2006

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

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

Laboratory name	Description	Contribution
National Institute of Hygiene	National Center for Disease Prevention and Control	
National Research Institute, Pulawy - Departament of Microbiology		16 regional veterinary laboratories reported to NRL-Salmonella results on Salmonella prevalence in foodstuffs, animals and feedstuffs
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 2006. The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given.
The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.
The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.
The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.
The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information:

Data on the number of herds, in case of cattle was obtained from the Agency for Restructuring and Modernisation of Agriculture; while, data on the herds of other animals were obtained in the District Veterinary Inspectorates. Data sent by the inspectorates are approximate and they refer to the end of 2006.
Data on the number of headage of susceptible animals, in case of cattle was obtained from the Agency for Restructuring and Modernisation of Agriculture; while, data on other animals was obtained in the District Veterinary Inspectorates. Data sent by the inspectorates are approximate and they refer to the end of 2006.
Number of slaughtered animals is a number of animals examined by the official veterinarians in the slaughterhouses. Report RRW-6 for 2006 for the Ministry of Agriculture and Rural Development.

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

2006

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 compliant 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:

The number of turkeys, geese and horses slightly increased in 2006 comparing to 2005. Total number of pigs increased by 26% in 2006 comparing to 2005. Total number of bovine animals increased by 15%. From the last year there is a significant increase in total number of farmed deer. There are 150 herds of farmed deer in Poland, numbering from less than ten to a few hundred animals. They are breeded for meat, antlers and hide.
The number of goats was similar as in 2005. There was a decrease in number of sheeps in 2006 comparing to 2005.

Additional information

Legal acts for animal health protection, 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, swine brucellosis, TSE and rabies) are subject to obligatory control and the other part is subject 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 holdings	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*
Cattle (bovine animals)	in total	813151		743896		1426765		5273123	
Deer	farmed - in total	150		150				10873	
Ducks	in total	35000		34000		2954596		2000000	
Gallus gallus (fowl)	broilers	14000		6000				226000000	
	breeding flocks, unspecified - in total	3698		2500				53000000	
	mixed flocks/ holdings	162000		155000				11000000	
	laying hens	45000		44000				24000000	
	in total	224698		207500		527698148		314000000	
Geese	breeding flocks, unspecified - in total							53000000	
	mixed flocks/ holdings							11000000	
	in total	15000		14000		5307984		4000000	
Goats	in total	4194		4000		111		21536	
Pigs	in total	534000		533000		21985532		25100000	
Sheep	in total	5242		5000		21205		251422	
Solipeds, domestic	horses - in total	73000		68500		32648		198000	
Turkeys	in total	16000		15000		25222128		14000000	
Wild boars	farmed - in total	14		14				284	

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 control examinations and commissioned examinations carried out 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 plays 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 cattle and pigs is not well recognized.
S. Enteritidis predominates in Gallus gallus and it is also observed in other poultry. Species specific S. Choleraesuis occurs in pigs, mostly in clinical cases but S. Typhimurium was the most frequent serovar found in NRL-Salmonella among swine isolates. The most frequent serovars in poultry were: S. Enteritidis, S. Infantis, S. Mbandaka, S. Virchow, S. Hadar, S. Typhimurium, and in pigs S. Typhimurium, S. Derby, S. Bredeney, S. Choleraesuis. Higher Salmonella prevalence was observed in poultry commercial flocks than in breeders. There were differences in Salmonella infection rates in different poultry species. Duck flocks were the most often infected in contrast to lowest infection rate observed in turkey flocks.
Poultry products (raw materials) were the most frequently contaminated by Salmonella. Subsequently, a substantial reduction in Salmonella rate was noted along food processing. High Salmonella contamination rate was found in broiler carcasses after slaughter (13%), raw broiler meat preparation intended to be eaten cooked (6.7%) and 1.3% of eggs and egg products. 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 (becoming higher) of Salmonella in live pigs.
Other animals were rarely tested and therefore the Salmonella epidemiological situation remained not well recognized.
No Salmonella case was noted in ready to eat broiler and turkey meat products, fish and products of thereof. Salmonella Enteritidis predominated in food isolates.

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.

Recent actions taken to control the zoonoses

Salmonella monitoring program in poultry, based on Directive 92/ 117/ EEC, was introduced in July 1999. The program covers egg and meat production both in breeding and commercial flocks of

chicken, turkey, geese and ducks. Sampling on the farm environment is voluntary prior settlement and obligatory in laying flocks during rearing and production period as well as before slaughter in broilers. Sampling is done by owners or veterinary officers. The tests are performed in regional veterinary labs. When S. Enteritidis or S. Typhimurium is detected in breeding flock or layers, control measures are introduced. The eggs are kept on holding and no birds may leave the flock until official sampling. If the result is confirmed, official authorities supervise slaughtering of the birds. Eggs from S. Enteritidis and/ or S. Typhimurium positive flocks are destroyed or sent to the egg-processing industry to be heat-treated. After the depopulation of the flock the farm is cleaned and disinfected, including safe disposal of manure or litter.
Results of the program were not evaluated till establishment of National Reference Laboratory–Salmonella (NRL-Salmonella) in the Department of Microbiology (National Veterinary Research Institute, Pulawy) in 2003.
There is no control programs in other animal species. These animals are tested 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.
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. This circular, anticipating the requirements of Regulation (EC) No.2160/ 2003, replaces Circular No. 3/ 99 and will be applied from 30 Semptember 2006 to 1 February 2008 (date of the implementation of the requirements as in Article 4(1) of the above mentioned Regulation)
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.

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

2.1.2. Salmonellosis in humans

2.1.3. Salmonella in foodstuffs

A. 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.

B. 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.

C. 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.

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)								
fresh	RVL	batch	25	1638	213	33	15	165
minced meat								
intended to be eaten cooked	RVL	batch	25	134	21	7		14
meat preparation								
intended to be eaten cooked	RVL	batch	25	226	37	4		33
meat products								
raw but intended to be eaten cooked	RVL	batch	25	1987	134			134
cooked, ready-to-eat	RVL	batch	25	339	0			
mechanically separated meat (MSM)	RVL	batch	25	464	74	13	4	57
carcass (1)	RVL	single	25	470	261			261
Meat from turkey								
fresh	RVL	batch	25	1141	65			65
minced meat								
intended to be eaten cooked	RVL	batch	25	1799	204			204
meat preparation								
intended to be eaten cooked	RVL	batch	25	475	31	11		20
meat products								
raw but intended to be eaten cooked	RVL	batch	25	208	3			3
cooked, ready-to-eat	RVL	batch	25	243	0			
mechanically separated meat (MSM)	RVL	batch	25	691	44			44
Meat from duck	RVL	batch	25	299	17			17
Meat from geese	RVL	batch	25	210	13			13
Meat from poultry, unspecified								
meat products	RVL	batch	25	470	0			

(1) : neck skin samples

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								
intended for direct human consumption	RVL	batch	25	22	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	RVL	batch	25	248	0			
intended for manufacture of pasteurised/ UHT products	RVL	batch	25	106	0			
pasteurised milk	RVL	batch	25	402	0			
Milk, goats'								
raw								
intended for direct human consumption	RVL	batch	25	6	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	RVL	batch	25	94	0			
intended for manufacture of pasteurised/ UHT products	RVL	batch	25	11	0			
Milk, sheep's								
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	RVL	batch	25	1	0			
Cheeses made from cows' milk								
soft and semi-soft								
made from raw or low heat-treated milk	RVL	batch	25	299	0			
made from pasteurised milk	RVL	batch	25	1814	2			2
unspecified	RVL	batch	25	32	0			
Cheeses made from goats' milk								

soft and semi-soft								
made from raw or low heat-treated milk	RVL	batch	25	3	0			
Cheeses made from sheep's milk								
soft and semi-soft								
made from raw or low heat-treated milk	RVL	batch	25	24	0			
Dairy products (excluding cheeses)								
butter								
made from raw or low heat-treated milk	RVL	batch	25	893	0			
cream								
made from raw or low heat-treated milk	RVL	batch	25	203	0			
milk powder and whey powder	RVL	batch	25	842	0			
ice-cream	RVL	batch	25	339	0			
dairy products, not specified	RVL	batch	25	1614	0			
ready-to-eat								
made from pasteurised milk	RVL	batch	25	623	5			5

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	RVL	batch	25	3112	27		3	24
minced meat								
intended to be eaten raw	RVL	batch	25	39	0			
intended to be eaten cooked	RVL	batch	25	7485	18			18
meat preparation								
intended to be eaten raw	RVL	batch	25	552	2			2
intended to be eaten cooked	RVL	batch	25	2116	14		1	13
meat products								
raw but intended to be eaten cooked	RVL	batch	25	4672	24		5	19
cooked, ready-to-eat	RVL	batch	25	4607	26		3	23
mechanically separated meat (MSM)	RVL	batch	25	131	17			17
Meat from bovine animals								
fresh	RVL	batch	25	1731	19	1		18
minced meat								
intended to be eaten raw	RVL	batch	25	298	5			5
intended to be eaten cooked	RVL	batch	25	3095	18			18
meat preparation								
intended to be eaten raw	RVL	batch	25	314	1			1
intended to be eaten cooked	RVL	batch	25	246	1			1
meat products								
raw but intended to be eaten cooked	RVL	batch	25	685	11			11
cooked, ready-to-eat	RVL	batch	25	26	0			
mechanically separated meat (MSM)	RVL	batch	25	185	4			4
Meat from horse								
fresh	RVL	batch	25	45	0			
Other products of animal origin								

gelatin and collagen		RVL	batch	25	391	0			
Meat, mixed meat									
minced meat		RVL	batch	25	1587	6			6
Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos)									
meat products									
raw but intended to be eaten cooked		RVL	batch	25	816	2			2

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	RVL	batch	25	902	7			7
- at retail	RVL	batch	25	741	12			12
raw material (liquid egg) for egg products	RVL	batch	25	221	0			
Egg products	RVL	batch	25	57	0			
Fishery products	RVL	batch	25	329	0			
Crustaceans								
unspecified								
cooked	RVL	batch	25	38	0			
raw		batch	25	52	0			
Molluscan shellfish								
cooked	RVL	batch	25	6	0			
raw	RVL	batch	25	22	0			
Sprouted seeds	RVL	batch	25	66	0			
Fruits and vegetables								
precut								
ready-to-eat	RVL	batch	25	13	0			
Snails	RVL	batch	25	15	0			
Other processed food products and prepared dishes								
unspecified	RVL	batch	25	366	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)

Sampling is the part a permanent monitoring scheme and is performed by operators or by official veterinarians at the hatcheries or in the farms.

Laying hens flocks

Sampling is the part of a monitoring scheme and it is performed by operators or official veterinarians on the holdings.

Frequency of the sampling

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

Other: voluntary

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

Other: at age of 4 weeks; 1-2 weeks prior to moving;

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

Other: every 4 weeks and 1-2 weeks prior to slaughter

Laying hens: Day-old chicks

Other: voluntary

Laying hens: Rearing period

Other: 2 weeks prior to moving

Laying hens: Production period

Every 15-20 weeks

Laying hens: 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; 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 hatchery

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

four-week-old birds; and 2 weeks before moving to laying phase or laying unit

Breeding flocks: Production period

Directive 92/ 117/ EEC

Laying hens: Day-old chicks

Directive 92/ 117/ EEC

Laying hens: Rearing period

Directive 92/ 117/ EEC

Laying hens: Production period

Directive 92/ 117/ EEC

Laying hens: Before slaughter at farm

Directive 92/ 117/ EEC

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.

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

Control program/ mechanisms

The control program/ strategies in place

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

In Poland reproductive poultry flocks, flocks of poultry intended for slaughter and high-production flocks are monitored for detection of species-specific and species non-specific salmonella from July 1999, on the basis of the instruction of Chief Veterinary Officer–based on the Directive 92/ 117.
-IW.z. II D/ Sal-1/ 99- on eradication of salmonellosis in reproduction poultry herds
-IW.z. II D/ Sal-2/ 99- on eradication of salmonellosis in poultry herds intended for slaughter
-IW.z. II D/ Sal-3/ 99- on eradication of salmonellosis in high-production poultry herds
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.

Recent actions taken to control the zoonoses

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. This circular, anticipating the requirements of Regulation (EC) No. 2160/ 2003, replaces Circular Nr 3/ 99 and will apply from 30 September 2006 to 1st January 2008 (date for implementation of requirements as in Article 4(1) of the above mentioned Regulation). 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.

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.

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 permanent monitoring scheme and it is performed by the official veterinarians or the farmers. The samples are taken in the hatcheries or in the farms.

Broiler flocks

Obligatory sampling is performed by the official veterinarians or the farmers. The samples are taken in 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 4 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

Directive 92/ 117/ EEC

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

Directive 92/ 117/ EEC

Breeding flocks: Production period

Directive 92/ 117/ EEC

Broiler flocks: Day-old chicks

Directive 92/ 117/ EEC

Broiler flocks: Before slaughter at farm

Directive 92/ 117/ EEC

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.

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

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

In 2005,Salmonella was found in 5.0% and 9.4% of, respectively, breeding and broiler flocks. S. Enteritidis was found in 40.0% of positive breeding flocks and 28.5% of broilers. S. Hadar, S. Virchow, S. Infantis and S. Typhimurium were more frequently observed in meat production line than in layers.
In 2006 five most frequently isolated Salmonella serovars from broiler flocks were, respectively: Salmonella Enteritidis (55.6%), S.Infantis (14.4%), S.Hadar (8.8%), S.Mbandaka (6.4%), S.Typhimurium (4.7% of tested samples).

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 directive 92/ 117/ EEC

Meat production flocks

The sampling 1-2 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 dir. 92/ 117/ EEC

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

Other: based on dir. 92/ 117/ EEC

Meat production flocks: Day-old chicks

Other: based on dir. 92/ 117/ EEC

Meat production flocks: Rearing period

Other: based on dir. 92/ 117/ EEC

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: Dir.92/ 117/ EEC

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

Other: Dir.92/ 117/ EEC

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

Other: Dir.92/ 117/ EEC

Meat production flocks: Day-old chicks

Other: Dir.92/ 117/ EEC

Meat production flocks: Before slaughter at farm

Other: Dir.92/ 117/ EEC

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.

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

Monitoring system

Sampling strategy

Breeding flocks

Based on Directive 92/ 117/ EEC

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

dir.92/ 117

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

dir.92/ 117

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

dir.92/ 117

Meat production flocks: Day-old chicks

dir.92/ 117

Meat production flocks: Before slaughter at farm

dir.92/ 117

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

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.

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

Monitoring system

Sampling strategy

Breeding flocks

Salmonella monitoring program in poultry, based on Directive 92/ 117/ EEC.

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: dir.92/ 117

Breeding flocks: Production period

Other: dir.92/ 117

Meat production flocks: Day-old chicks

Other: dir.92/ 117

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: dir.92/ 117

Breeding flocks: Rearing 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: Day-old chicks

dir.92/ 117/ EEC

Breeding flocks: Rearing period

dir.92/ 117/ EEC

Breeding flocks: Production period

dir.92/ 117/ EEC

Meat production flocks: Day-old chicks

dir.92/ 117/ EEC

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.

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.

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.

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

Based on Directive 92/ 117/ EEC

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
-IW.z. II D/ Sal-3/ 99- on eradication of salmonellosis in high-production poultry herds

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.

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 program in pigs.

Multiplying herds

There is no Salmonella monitoring program in pigs.

Fattening herds

There is no Salmonella monitoring program in pigs.

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

The 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)

G. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

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

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Virchow	S. Infantis	S. Hadar
Gallus gallus (fowl)										
parent breeding flocks for egg production line	RVL	flock	1080	44	33	4	5		2	
day-old chicks	RVL	flock	402	8	6		2			
during rearing period	RVL	flock	202	3		1			2	
during production period	RVL	flock	476	33	27	3	3			
grandparent breeding flocks for meat production line	RVL	flock	37	0						
parent breeding flocks for meat production line	RVL	flock	1876	107	56	10	32	7		2
day-old chicks	RVL	flock	1065	68	40	5	21	1		1
during rearing period	RVL	flock	289	10	5	2	3			
during production period	RVL	flock	522	29	11	3	8	6		1
parent breeding flocks, unspecified	RVL	flock	705	25	20	1	2	1		1
day-old chicks	RVL	flock	558	17	14		2	1		
during rearing period	RVL	flock	73	2		1				1
during production period	RVL	flock	74	6	6					

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. Infantis	S. Hadar	S. Mbandaka	S. Agona
Gallus gallus (fowl)											
laying hens											
day-old chicks	RVL	flock	205	23	11	2	9			1	
during rearing period	RVL	flock	713	59	29	7	23				
during production period	RVL	flock	1819	188	73	6	102	6		1	
broilers	baseline study	flock	1915	791	440	37	79	114	70	51	
day-old chicks	RVL	flock	2580	288	141	9	126		6		6
during rearing period	RVL	flock	7430	722	340	28	350	1	1	1	1
unspecified											
day-old chicks	RVL	flock	30	0							
during rearing period	RVL	flock	96	0							
during production period	RVL	flock	124	8	3		5				
Ducks											
breeding flocks	RVL	flock	87	8		1	7				
meat production flocks	RVL	flock	204	31	10	5	16				
Geese											
breeding flocks	RVL	flock	235	16	4	1	11				
meat production flocks	RVL	flock	1238	138	12	30	96				
Turkeys											
breeding flocks	RVL	flock	42	3		2	1				
meat production flocks	RVL	flock	2260	189	19	28	141	1			

Footnote

The same flock could have been tested several times during the reporting.

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
Pigeons	RVL	animal	205	15	1	12	2
wild	RVL	animal	14	1	1		
Guinea fowl	RVL	flock	6	0			
Quails	RVL	flock	136	3	1	1	1
Pheasants	RVL	flock	97	1			1
Partridges	RVL	flock	2	0			
Ostriches	RVL	flock	220	2	1		1
Birds							
wild	RVL	animal	28	2	1	1	

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
Cattle (bovine animals)							
calves (under 1 year)	RVL	animal	117	2		1	1
adult cattle over 2 years	RVL	animal	135	1	1		
Sheep	RVL	animal	22	2			2
Goats	RVL	animal	11	0			
Pigs							
breeding animals	RVL	animal	144	2			2
fattening pigs	RVL	animal	173	9	2	4	3
Solipeds, domestic	RVL	animal	23	1		1	
Dogs	RVL	animal	46	2	1	1	
Foxes	RVL	animal	8	8	3	2	3
Rodents							
laboratory animal	RVL	animal	30	6	6		

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								
meat meal	RVL	batch	25	28	6			6
meat and bone meal	RVL	batch	25	923	10			10
bone meal	RVL	batch	25	14	0			
poultry offal meal	RVL	batch	25	282	1			1
feather meal	RVL	batch	25	20	0			
blood meal	RVL	batch	25	39	2			2
animal fat	RVL	batch	25	41	0			
Feed material of marine animal origin								
fish meal	RVL	batch	25	582	3			3
Other feed material	RVL	batch	25	27	0			

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified
Feed material of cereal grain origin								
barley derived	RVL	batch	25	34	0			
wheat derived	RVL	batch	25	163	0			
maize derived	RVL	batch	25	60	0			
other cereal grain derived	RVL	batch	25	12	0			
	RVL	batch	25	74	0			
Feed material of oil seed or fruit origin								
rape seed derived	RVL	batch	25	279	15			15
palm kernel derived	RVL	batch	25	3	0			
soya (bean) derived	RVL	batch	25	270	4			4
sunflower seed derived	RVL	batch	25	217	3			3
linseed derived	RVL	batch	25	47	1			1
Other feed material								
legume seeds and similar products	RVL	batch	25	5	0			
tubers, roots and similar products	RVL	batch	25	4	0			

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified
Compound feedingstuffs for cattle								
process control	RVL	batch	25	86	0			
final product	RVL	batch	25	507	4			4
Compound feedingstuffs for pigs								
process control	RVL	batch	25	114	0			
final product	RVL	batch	25	1406	18			18
Compound feedingstuffs for poultry (non specified)								
process control	RVL	batch	25	21	0			
final product	RVL	batch	25	771	5			5
Compound feedingstuffs for poultry -breeders								
process control	RVL	batch	25	8	0			
final product	RVL	batch	25	78	0			
Compound feedingstuffs for poultry - laying hens								
process control	RVL	batch	25	106	0			
final product	RVL	batch	25	477	9			9
Compund feedingstuffs for poultry - broilers								
process control	RVL	batch	25	89	0			
final product	RVL	batch	25	889	11			11
Pet food (1)	RVL	batch	25	87	0			
dog snacks (pig ears, chewing bones)	RVL	batch	25	439	27			27
Compound feedingstuffs for horses	RVL	batch	25	12	0			
Compound feedingstuffs for fur animal	RVL	batch	25	87	16			16
Compound feedingstuffs for fish	RVL	batch	25	666	0			
Compound feedingstuffs for rabbits	RVL	batch	25	112	0			

(1) : exotic birds feed

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		Other animals		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	58	56	3	1	1	475	2218	415		
Number of isolates serotyped	N=	27	21	2	1	1	90	1263	298	0	0
Number of isolates per type											
S. Agama			1								
S. Agona								26	1		
S. Albany								1			
S. Amsterdam								1			
S. Braenderup								8			
S. Bredeney								2			
S. Choleraesuis			2				3				
S. Derby								5			
S. Dessau								4			
S. Enteritidis		19	2	1			83	689	156		
S. Hadar						1		79	7		
S. Heidelberg								23			
S. Indiana			1					22	3		
S. Infantis		1						70	24		
S. Istanbul									1		
S. Kottbus								1			
S. Mbandaka								26			

S. Meleagridis							1			
S. Montevideo							5			
S. Muenster							1			
S. Newlands	1									
S. Newport	3	1					19	2		
S. Oranienburg							4			
S. Reading								2		
S. Saintpaul							2	4		
S. Sandiego							2			
S. Senftenberg							1	19		
S. Tshiongwe		5					18			
S. Typhimurium	3	9	1	1		4	157	9		
S. Virchow							91	33		
S. Gallinarum							5	37		

Footnote

(*) M : Monitoring, C : Clinical
Strains submitted by regional laboratories.

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=	9		32		282					
Number of isolates serotyped	N=	2	0	5	0	111	0	0	0	0	0
Number of isolates per type											
S. Albany						19					
S. Braenderup						5					
S. Enteritidis						22					
S. Hadar						16					
S. Indiana						12					
S. Infantis						11					
S. Mbandaka						5					
S. Panama		1									
S. Stanley		1									
S. Typhimurium				4		15					
S. Virchow				1		6					

Footnote

(*) M : Monitoring, C : Clinical
Strains submitted by regional laboratories.

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 and pigs is not well recognized.

Control program/ mechanisms

The control program/ strategies in place

B. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Type of specimen taken

Baseline studies in broilers are performed according to appropriate EU technical specifications.

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

(2005):
Antimicrobial resistance was observed in 45.1% of tested Salmonella strains. Resistance and multiresistance was observed mainly in S. Hadar and S. Typhimurium. Antimicrobial resistance in non-pathogenic E. coli was less frequent than in Salmonella (41.0%). The highest resistance and multiresistance was noted in strains isolated from Gallus gallus. Quinolones and betalactam resistance was observed both in Salmonella and E. coli.
The baseline studies in broilers revealed:
- the most frequent antimicrobial resistance among 253 tested Salmonella strains were as follows: nalidixic acid (35,2%), streptomycin and spectinomycin (20,2% and 18,6%), tetracycline (17.0%), sulfametoxazole (16,6%), and ampicilin (12.3%). All tested isolates were susceptible for apramycine and ceftiofur. 57.3% of tested isolates were resistant to at least one antimicrobial. A total of 36 resistance patterns were noted comprising from 1 to 8 antimocrobials.
Strains isolated from other animal species, food and feed were not tested for antimicrobial resistance.

C. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food and feed were not tested for antimicrobial resistence.

D. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food and feed were not tested for antimicrobial resistance.

E. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

Strains isolated from food and feed were not tested for antimocrobial resistance.

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

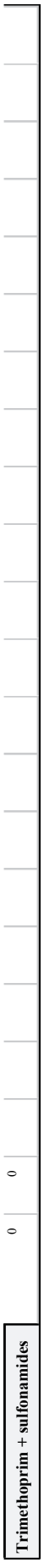
n = Number of resistant isolates	S. Enteritidis							
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**	
Isolates out of a monitoring programme						no		
Number of isolates available in the laboratory						139		
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines								
Tetracyclin					139	7		
Amphenicols								
Chloramphenicol					139	0		
Florfenicol					139	0		
Cephalosporins								
Cephalothin					139	2		
Ceftiofur					139	0		
Cefuroxim					139	1		
Fluoroquinolones								
Enrofloxacin					139	0		
Quinolones								
Nalidixic acid					139	42		
Sulfonamides								
Sulfonamide					139	14		
Trimethoprim					139	0		
Aminoglycosides								
Streptomycin					139	7		
Gentamicin					139	1		
Neomycin					139	0		
Penicillins								
Ampicillin					139	6		
Fully sensitive						74		
Resistant to 1 antimicrobial						52		
Resistant to 2 antimicrobials						1		
Resistant to 3 antimicrobials						7		
Resistant to 4 antimicrobials						1		
Resistant to >4 antimicrobials						2		

Footnote

The results come from baseline survey on the prevalence of Salmonella spp in broiler flock of Gallus gallus.

Table Antimicrobial susceptibility testing of S. Enteritidis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Enteritidis																					
	Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study																					
Isolates out of a monitoring programme	no																					
Number of isolates available in the laboratory	139																					
Antimicrobials:	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Tetracyclines																						
Tetracyclin	139	7							128	4			1	6							1	32
Amphenicols																						
Chloramphenicol	139	0							22	98	19										2	64
Florfenicol	139	0							76	48	15										2	64
Cephalosporins																						
Cephalothin	139	0							105	21	9	2	2								2	64
3rd generation cephalosporins	0	0																				
Ceftiofur	139	0					118	19	2												1	8
Cefuroxim	139	0							3	100	31	4	1								1	32
Fluoroquinolones																						
Ciprofloxacin	0	0																				
Enrofloxacin	139	0	78	19	6	24	8	4													1	2
Quinolones																						
Nalidixic acid	139	42									97			1	9	32					8	128
Sulfonamides																						
Sulfonamide	139	0												120	3	2	14				64	1024
Trimethoprim	139	0								139											4	32
Aminoglycosides																						
Streptomycin	139	7								124	8			2	5						4	64
Gentamicin	139	1						138					1								1	32
Neomycin	139	0							136	3											2	32
Kanamycin	0	0																				
Penicillins																						
Ampicillin	139	6						104	26	3				6							1	32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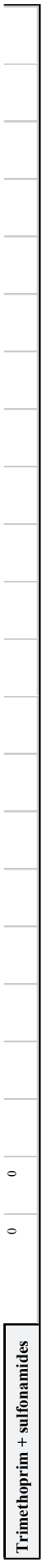
Trimethoprim + sulfonamides

Table Antimicrobial susceptibility testing of S. Infantis in broilers - Gallus gallus (fowl) - sampling in the framework of the broiler baseline study - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																						
	S. Infantis																					
	Gallus gallus (fowl) - broilers - sampling in the framework of the broiler baseline study																					
Isolates out of a monitoring programme	no																					
Number of isolates available in the laboratory	39																					
Antimicrobials:	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Tetracyclines																						
Tetracyclin	39	1							34	4				1								
Amphenicols																						
Chloramphenicol	39	0							2	22	11	4										
Florfenicol	39	0							5	28	6											
Cephalosporins																						
Cephalothin	39	0							17	16	5		1									
3rd generation cephalosporins	0	0																				
Ceftiofur	39	0					15	23	1													
Cefuroxim	39	0								8	30	1										
Fluoroquinolones																						
Ciprofloxacin	0	0																				
Enrofloxacin	39	0	27	9		2		1														
Quinolones																						
Nalidixic acid	39	2									36	1			2							
Sulfonamides																						
Sulfonamide	39	0										1		29	2	2	5					
Trimethoprim	39	0								39												
Aminoglycosides																						
Streptomycin	39	2								4	15	17	1		2							
Gentamicin	39	0						38				1										
Neomycin	39	0							39													
Kanamycin	0	0																				
Penicillins																						
Ampicillin	39	3							31	5				3								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Trimethoprim + sulfonamides

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates	S. Typhimurium							
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**	
Isolates out of a monitoring programme						no		
Number of isolates available in the laboratory						15		
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines								
Tetracyclin					15	14		
Amphenicols								
Chloramphenicol					15	13		
Florfenicol					15	12		
Cephalosporins								
Cephalothin					15	0		
Ceftiofur					15	0		
Cefuroxim					15	0		
Fluoroquinolones								
Enrofloxacin					15	0		
Quinolones								
Nalidixic acid					15	13		
Sulfonamides								
Sulfonamide					15	13		
Trimethoprim					15	0		
Aminoglycosides								
Streptomycin					15	14		
Gentamicin					15	0		
Neomycin					15	0		
Penicillins								
Ampicillin					15	13		
Fully sensitive						0		
Resistant to 1 antimicrobial						0		
Resistant to 2 antimicrobials						2		
Resistant to 3 antimicrobials						0		
Resistant to 4 antimicrobials						0		
Resistant to >4 antimicrobials						13		
Number of multiresistant S. Typhimurium DT104								
resistant to other antimicrobials						13		

Footnote

The results come from baseline survey on the prevalence of Salmonella spp in broiler flock of Gallus gallus.

Table Antimicrobial susceptibility testing of Salmonella in animals

n = Number of resistant isolates	Salmonella spp.							
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**	
Isolates out of a monitoring programme					no			
Number of isolates available in the laboratory					255			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines								
Tetracyclin					255	43		
Amphenicols								
Chloramphenicol					255	13		
Florfenicol					255	12		
Cephalosporins								
Cephalothin					255	9		
Ceftiofur					255	0		
Cefuroxim					255	1		
Fluoroquinolones								
Enrofloxacin					255	2		
Quinolones								
Nalidixic acid					255	89		
Sulfonamides								
Sulfonamide					255	42		
Trimethoprim					255	1		
Aminoglycosides								
Streptomycin					255	51		
Gentamicin					255	2		
Neomycin					255	1		
Penicillins								
Ampicillin					255	31		
Fully sensitive					255	95		
Resistant to 1 antimicrobial					255	85		
Resistant to 2 antimicrobials					255	20		
Resistant to 3 antimicrobials					255	20		
Resistant to 4 antimicrobials					255	11		
Resistant to >4 antimicrobials					255	25		

Footnote

The results come from baseline survey on the prevalence of Salmonella spp in broiler flock of Gallus gallus.

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

- Disc diffusion
- Agar dilution
- Broth dilution
- E-test

Standards used for testing

- NCCLS

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol		8	16	32	2	64				
Florfenicol		8	16	32	2	64				
Tetracyclines										
Tetracyclin		4	8	16	1	32				
Cephalosporins										
Cephalothin		8	16	32	2	64				
Ceftiofur		2	4	8	0.5	8				
Cefuroxim		8	16	32	1	32				
3rd generation cephalosporins										
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin		0.25	0.5	2	0.016	2				
Quinolones										
Nalidixic acid		16		32	8	128				
Trimethoprim		8		16	4	32				
Sulfonamides										
Sulfonamide		256		512	64	1024				
Aminoglycosides										
Streptomycin		8	16	32	4	64				
Gentamicin		4	8	16	1	32				
Neomycin		4	8	16	2	32				
Kanamycin										
Trimethoprim + sulfonamides										
Penicillins										
Ampicillin		8	16	32	1	32				

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 of Campylobacter realized in Poland.
For the last year, 1029 bovine animals were tested in the semen collection centre with negative results for Campylobacter.

Recent actions taken to control the zoonoses

The present system of communicable diseases epidemiological surveillance in Poland is in line with the act of 6 September 2001 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 clarifying investigation.

2.2.2. Campylobacteriosis in humans

2.2.3. Campylobacter in foodstuffs

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. lari	C. jejuni	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus)										
fresh	RVL	single	25	9	6					6
meat products										
cooked, ready-to-eat	RVL	single	25	5	0					
Meat from geese	RVL	single	25	3	0					

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. upsaliensis	C. lari	thermophilic Campylobacter spp., unspecified
Meat from pig										
fresh	RVL	single	25	5	0					
minced meat										
intended to be eaten raw	RVL	single	25	5	0					
Meat from bovine animals										
fresh	RVL	single	25	5	0					
minced meat										
intended to be eaten raw	RVL	single	25	5	0					
Milk, cows'										
raw										
intended for direct human consumption	RVL	single	25	2	0					
raw milk for manufacture										
intended for manufacture of raw or low heat-treated products	RVL	single	25	2	0					

2.2.4. Campylobacter in animals

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	1029	0					

Footnote

All bovine animals were tested in the semen collection centre.

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 an obligatory registrated disease.
There is no monitoring programme of Listeria spp. realized in Poland. In 2006 the samplings were carried out as a part of the official controls and at the initiative of the operators. Positive samples were detected in various categories of meat, fish and dairy products.
In 2005, 3066 samples of milk and dairy products were tested, and L. monocytogenes were detected in 10. Three hundred ninety seven (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-11positive 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.

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	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Milk, cows'								
raw								
intended for direct human consumption	RVL	batch	25	112	0			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products	RVL	batch	25	102	1	1		
pasteurised milk	RVL	batch	25	595	1	1		
UHT milk	RVL	batch	25	71	0			
Cheeses made from cows' milk								
soft and semi-soft								
made from raw or low heat-treated milk	RVL	batch	25	14	1	1		
made from pasteurised milk	RVL	batch	25	1810	1	1		
hard								
made from raw or low heat-treated milk	RVL	batch	25	45	0			
made from pasteurised milk	RVL	batch	25	858	1	1		
Cheeses made from goats' milk								
soft and semi-soft								
made from raw or low heat-treated milk	RVL	batch	25	3	2	2		
made from pasteurised milk	RVL	batch	25	10	0			
Cheeses made from sheep's milk								
soft and semi-soft								

made from raw or low heat-treated milk	RVL	batch	25	28	0			
hard								
made from raw or low heat-treated milk	RVL	batch	25	29	0			
Dairy products (excluding cheeses)								
butter	RVL	batch	25	403	2	2		
cream	RVL	batch	25	589	0			
dairy products, not specified	RVL	batch	V	2368	0			
dairy desserts								
chilled	RVL	batch	V	129	0			
milk powder and whey powder	RVL	batch	25	5	0			

Footnote

V = varied, 1g or 25g
The samplings were carried out as a part of the official controls and sampling at the initiative of the operators.

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g	> detection limit but =< 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)								
fresh	RVL	batch	25	99	2	2		
meat products								
cooked, ready-to-eat	RVL	batch	25	710	0			
Meat from pig								
fresh	RVL	batch	25	245	6	6		
meat products								
cooked, ready-to-eat	RVL	batch	25	8545	121	102	15	4
(detection method)		batch	25	6210	102	102		
(enumeration method)		batch	25	2335	19		15	4
Meat from bovine animals								
fresh	RVL	batch	25	76	2	2		
meat products								
cooked, ready-to-eat	RVL	batch	25	87	9	8	1	
(detection method)		batch	25	79	8	8		
(enumeration method)		batch	25	8	1		1	
Fish								
smoked	RVL	batch	25	397	18	18		
raw								
frozen	RVL	batch	25	14	1	1		
Molluscan shellfish								
cooked	RVL	batch	25	2	0			
Meat, mixed meat								
meat products	RVL	batch	25	1491	11	11		
Meat from turkey								
fresh	RVL	batch	25	5	1	1		
Other food	RVL	batch	25	347	0			

Footnote

The samplings were carried out as a part of the official controls and sampling at the initiative of the operators. Detection method was used for testing products placed on the market during their shelf-life. The products on the last day of shelf-life were tested by enumaration method.

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	RVL	animal	61	0		
dairy cows	RVL	animal	54	1		1
Sheep	RVL	animal	6	1		1
Goats	RVL	animal	10	0		
Pigs	RVL	animal	89	0		
Zoo animals, all	RVL	animal	10	1		1

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 of the contamination of humans and animals with Verocytoxic strains of Escherichia coli was conducted, nor any examinations of a wider spectrum concerning the carrier state, identification and description of threats to human health from pathogenic bacteria producing vero (shiga) toxins. Recent examinations, using the methods based on molecular biology and PCR tests, conducted within the frame of multiannual programme indicate that similarly to other countries, STEC bacteria (Shiga toxin-producing E.coli) coming from cattle and pigs show clonal similarity with bacteria of this type, isolated in humans. A frequently occurring carrier state, similar pathogenic characteristics and a high level of genotypic kinship were diagnosed. These characteristics are a source of potential threat to human health (J. Osek).

Additional information

The data concerning Verocytotoxic E. coli are obtained from the examinations conducted within the frame of a multiannual research programme 2003-2008 under the name Protection of animal and public health. The research material was a beef muscle taken in slaughterhouses, coming from healthy animals.The method of testing consisted on the preliminary multiplication in TSB broth (225ml) in 37 º C, 18 h (of 25 g of a muscle sample) and then on marking the gene stx of a Vero toxin using PCR technique.
In 2005, NRL tested 442 bovine meat-fresh samples, among witch 26 were positive cases (5,88%)and district veterinary laboratories tested 1104 other meat samples in witch 41 were positive cases(3,71%).
In 2006, 475 meat samples were tested, among which 2 were positive cases (cattle).

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	Total units positive for Escherichia coli, pathogenic	E.coli, pathogenic, unspecified	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from broilers (Gallus gallus)									
fresh	RVL	batch	25	24	1	1			
Meat from turkey									
fresh	RVL	batch	25	29	5	5			
Meat from pig									
fresh	RVL	batch	25	8	0				
minced meat									
intended to be eaten raw	RVL	batch	25	248	0				
Meat from bovine animals									
fresh	RVL	batch	25	7	0				
minced meat									
intended to be eaten raw	RVL	batch	25	30	3	3			
Milk, cows'									
raw	RVL	batch	25	2	2	2			
intended for direct human consumption	RVL	batch	25	278	0				
Meat from other animal species or not specified									
meat products	RVL	batch	25	41	5	5			
Dairy products (excluding cheeses)									
dairy products, not specified	RVL	batch	25	3484	4	4			
Crustaceans									
shrimps	RVL	batch	25	67	0				
Other food	RVL	batch	25	1566	27	27			

Footnote

The samplings were carried out as a part of the official controls and sampling at the initiative of the operators.
The method PN-ISO 16649-2:2004 was used for analysis.

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	Units tested	Total units positive for Escherichia coli, pathogenic	E.coli, pathogenic, unspecified	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Poultry, unspecified	RVL	animal	10	10	10			

Footnote

The samplings were carried out at the initiative of the operators.
Isolation was made with culture method.

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

The percentage of infected herds in Poland in the last 8 years (1999 – 2006) has been lower than 0,2 % and amounted to: 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% and in 2006-0.042%.
On the basis of data sent by the district veterinary inspectorate it is clear that in 2004, 73 sheep, 113 goats, 3321 pigs, 135 horses and 2 bisons underwent the intraderm tuberculinisation .
In 2005,9 goats and 5123 pigs undewent tuberculin tests, in 2006 - 82 goats, 4185 pigs and 55 farmed deer.
All animals were a negative. A single test in sheep and pigs is conducted without prior measuring of the thickness of the skin fold, on the inner side of an animals leg, as well on the skin of an auricle.
Actions undertaken recently to eradicate the disease:
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 on the procedures related to the eradication of animal tuberculosis of 14 August 2003 replaced by the Instruction of 28 July 2006, created on the basis of the Council Directive 64/ 432/ EEC.
Until 31 April 2004 the testing programme under the Ordinance of the Minister of Agriculture and Rural Development of 12 October 1999 and the Ordinance of the Minister of Agriculture and Rural Development of 4 April 2003 was in operation, according to which the testing was obligatory for the cattle of 6 weeks of age in 1/ 3 of holdings in a district area, so that within 3 years all cattle in a district can be tested. Starting with the 1st of May 2004, under EU requirements, Poland examines by tuberculinisation cattle no younger than 6 weeks in 1/ 3 of herds in a district area, so that within 3 years all cattle in a district is tested.

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

Methods of sampling (description of sampling techniques)

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

In Poland there the treatment of cattle reacting positively is forbidden. The vaccinations against tuberculosis are not used for animals

Measures in case of the positive findings or single cases

The animal identified as ill based on the tuberculinisation testing results is subject to isolation and it is killed with lethal injection. The post mortem examination is then conducted and samples are taken for test in order to isolate and identify M. bovis.
In case of post-mortem detection of bovine tuberculosis in an animal, samples are taken for laboratory tests. The herd of which the killed animal originated is subject to routine tuberculinisation, its status of a herd officially free from tuberculosis is suspended until the results of tests for isolation of M. bovis are obtained.
The suspicion or confirmation of tuberculosis results in an administrative decision, with which a district veterinary officer forbids the transfer of cattle from one herd to another, orders isolation of a sick animal and undertakes all possible actions in order to prevent the disease from spreading.
In case of confirmation of the suspected tuberculosis infection, the district veterinary officer notifies the state district sanitary inspector of this fact, as well as the entity buying in milk, on the suspension of the officially free from tuberculosis herd status.

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.
On the basis of data sent by the district veterinary inspectorate it is clear that 82 goats, 4185 pigs, 55 farmed deer underwent the intraderm tuberculinisation in 2006. All animals were a negative. A single test in goats and pigs is conducted without prior measuring of the thickness of the skin fold, on the inner side of an animals leg, as well on the skin of an auricle.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium spp.	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex
Goats	official.vet.	animal	82	0				
Pigs	official vet.	animal	4186	0				
Zoo animals, all	RVL	animal	4	0				
Wolves								
wild	RVL	animal	3	3		3		
Deer								
wild	RVL	animal	1	1				1
Fish	RVL	animal	1	0				

Footnote

All goats and pigs (except one) were tested with tuberculin, rest of the animals were examinated bacteriologically.

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
Podkarpackie	97199	30952	23029	2	0	0	0	74.402	0.009	0
Dolnoslaskie	20819	6915	4939	6	5	1	16.667	71.424	0.121	0.101
Kujawsko-Pomorskie	38241	12883	11037	3	3	0	0	85.671	0.027	0.027
Lubelskie	117744	39111	29165	3	3	0	0	74.57	0.01	0.01
Lubuskie	6842	2229	1756	0	0	0	0	78.78	0	0
Lodzkie	76605	25695	22608	3	3	2	66.667	87.986	0.013	0.013
Malopolskie	115867	50182	39694	3	3	3	100	79.1	0.008	0.008
Mazowieckie	143960	58754	40358	44	34	8	18.182	68.69	0.109	0.084
Opolskie	13655	4204	3529	0	0	0	0	83.944	0	0
Podlaskie	56135	19633	17144	6	6	0	0	87.322	0.035	0.035
Pomorskie	23281	7912	6773	1	0	0	0	85.604	0.015	0
Slaskie	30613	9732	8171	4	0	0	0	83.96	0.049	0
Swietokrzyskie	65164	20000	16172	3	3	3	100	80.86	0.019	0.019
Warminsko-Mazurskie	27485	8722	7729	11	10	0	0	88.615	0.142	0.129
Wielkopolskie	62903	21312	18607	17	6	0	0	87.308	0.091	0.032
Zachodniopomorskie	13031	4147	2841	1	0	0	0	68.507	0.035	0
Total	909544	322383	253552	107	76	17	15.888	78.649	0.042	0.03
Total - 1	930436	312244	229712	124	78	18	14.516	73.568	0.054	0.034

Footnote

Number of herds which should be checked is 322 383 but when the official veterinarians started the tests they found that not in the all herds the animals were present.

Hence, this figure (253 552) is a number of herds that have been actually tested.
Therefore (taking into account the above notice):

- percentage of the herds coverage should be 96.3%
- percentage of the positive herds should be 0.034%
- percentage of the new positive herds should be 0.024%

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	143280	47673	45478	45478	9	9	9	95.396	0.02
Kujawsko-Pomorskie	451877	140606	141610	141610	6	6	6	100.714	0.004
Lubelskie	491594	163994	136497	136497	3	3	3	83.233	0.002
Lubuskie	80159	28176	24970	24970	0	0	0	88.622	0
Lodzkie	491830	151020	139352	139352	14	14	14	92.274	0.01
Malopolskie	293474	118098	91656	91656	5	5	5	77.61	0.005
Mazowieckie (1)	1070622	406864	306052	306052	309	157	344	75.222	0.101
Opolskie	138864	42243	47579	47579	0	0	0	112.632	0
Podkarpackie	212905	62398	50560	50560	2	2	2	81.028	0.004
Podlaskie	804125	254719	258942	258942	16	16	16	101.658	0.006
Pomorskie	206132	68641	63653	63653	1	1	1	92.733	0.002
Slaskie	145341	45213	44201	44201	26	26	26	97.762	0.059
Swietokrzyskie	220873	52894	55645	55645	14	14	14	105.201	0.025
Warminsko-Mazurskie	443062	133561	128077	128077	30	30	30	95.894	0.023
Wielkopolskie	793072	259072	235356	235356	23	23	23	90.846	0.01
Zachodniopomorskie	121108	34620	32432	32432	1	1	1	93.68	0.003
Total	6108318	2009792	1802060	1802060	459	307	494	89.664	0.025
Total - 1	6146623	1972141	1584421	1584421	538	530	1217106	80.34	0.034

(1) : It take into consideration:
- 33 heads of cattle with positive result of the tuberculin testing which was cerried out in the end of 2005
- 308 heads of cattle with positive result of the tuberculin testing carried out in 2006
- 3 heads of cattle with positive result of the bacteriological examination upon suspicion in post-mortem inspection

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
Kujawsko-Pomorskie	12883	140606	0	0	0	0	0	0	2	31	0	0	11035	141579
Dolnoslaskie	6915	47673	0	0	0	0	1	12	2	56	0	0	4936	45410
Lubelskie	39111	163994	0	0	0	0	0	0	0	0	0	0	29165	136497
Lubuskie	2229	28176	0	0	0	0	0	0	0	0	0	0	1756	24970
Lodzkie	25695	151020	0	0	0	0	0	0	1	0	0	0	22607	139352
Malopolskie	50182	118098	0	0	3	5	0	0	0	0	0	0	39691	91651
Mazowieckie	58754	406864	0	0	14	249	6	155	4	99	0	0	40334	305549
Opolskie	4204	42243	0	0	0	0	0	0	0	0	0	0	3529	47579
Podkarpackie	30952	62398	0	0	0	0	0	0	1	3	0	0	23028	50557
Podlaskie	19633	254719	0	0	1	9	0	0	4	270	0	0	17139	258663
Pomorskie	7912	68641	0	0	0	0	1	15	0	0	0	0	6772	63638
Slaskie	9732	45213	0	0	2	157	0	0	0	0	0	0	8169	44044
Swietokrzyskie	20000	52894	0	0	3	14	0	0	0	0	0	0	16169	55631
Warminsko-Mazurskie	8722	133561	0	0	1	18	0	0	0	0	0	0	7728	128059
Wielkopolskie	21312	259072	0	0	0	0	0	0	17	23	0	0	18590	235333
Zachodniopomorskie	4147	34620	0	0	0	0	0	0	1	440	0	0	2840	31992
Total	322383	2009792	0	0	24	452	8	182	32	922	0	0	253488	1800504
Total - 1	229712	1584421	0	0	29	591	5	75	39	3989	0	0	232371	1579766

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			
Lubelskie	6	60		0		0					
Dolnoslaskie	4	176		0		0					
Kujawsko-Pomorskie	3	100		0		0					
Lubuskie	19	4000		0		0					
Lodzkie	2	50		0		0					
Malopolskie	13	240		0		0					
Mazowieckie	3	76		0		0					
Opolskie	4	145		0		0					
Podkarpackie	10	290		0		0					
Podlaskie	3	80		0		0					
Pomorskie	19	1100		0		0					
Slaskie	3	26		0		0					
Swietokrzyskie	8	80		0		0					
Warminsko-Mazurskie	18	1800		0		0		54	1		
Wielkopolskie	7	550		0		0					
Zachodniopomorskie	28	2100		0		0					
Total	150	10873	0	0	0	0		54	1	0	0

Footnote

In Poland no routine tuberculin testing of species other then cattle is carried out. These tests were carried out at the initiative of the operators, all results of tuberculin tests were negative.

(*) 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.

Currently there is a legal ban on treating brucellosis infected animals and a ban on vaccinations on the territory of the whole country.

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

Since 1999, on the basis of the Ordinance of the Minister of Agriculture and Food Economy Management of 12 October 1999 laying down types of samples, the scope of tests and the way of keeping documentation in respect of control tests for infections, residues of chemical and biological substances, medicinal products or radioactive contamination in animal tissues, meat, foodstuffs of animal origin and raw material of animal origin unfit for human consumption (Journal of Laws No 93, item 1080) and the Ordinance of the Minister of Agriculture and Rural Development of 4 April 2003, annually one third of cattle population aged over 12 month have been subject to serological tests on the territory of a district so that within 3 years the whole cattle population on the territory of a district was covered by the tests. In the case of sheep and goats the tests are conducted in the herds where the evaluation of breeding value is performed, in all non castrated males (rams and bucks) older than 6 months. Blood samples are taken from 25% of animals when the herd consists of over 50 animals and from all the animals in the case of smaller herds.
The obligation to test aborted embryos was introduced in accordance with Article 42 (1) of the act 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 taken 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 and 0.008% in 2006.
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% while the number of infected herds in 2004 is higher than in 2003 but lower than in 2005.
During the tests of aborted embryos (segments of parenchymatous organs, ligated stomachs, whole embryos) in 2003 and 2004, no Brucella was isolated.
In 2004, 585 aborted embryos were supplied for testing, out of which 400 were tested bacteriologically.
In 2005, there were 12 newly infected herds, in which an infection was confirmed by serological tests in National Reference Laboratory in Pulawy.Brucella abortus was not isolated in any case, neither from the 12 animals in which the serological tests confirmed infection, nor from the aborted foetuses.
There were 578 notifications of abortions. Every of them was investigated by an official veterinarian. Bacteriological examination was carried out in 358 cases. Brucella abortus was not isolated in any of them.
No suspected lesions were found in an abbatoir.
The percentage of officially free herds at the end of the 2006 was 99,984% for herds which were tested.

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 29 July 2003 No GIW z. VIII 410/ Br-2/ 2003 (replaced by 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.

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

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
-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 referential 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.

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.

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 examination results of the milk to be bought in and the heat-treated milk.

Additional information

(2005)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), sheep and goats (rams and bucks) for reproduction, tests for brucellosis are compulsory:
- during quarantine and each 12 months in the case of boars
- before mating period.
Those tests are conducted according to the Directive 94/ 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 accordance with the Commission Decision 2006/ 169/ EC of 21 February 2006, Poland is officialy free of brucellosis (B.melitensis) as regards ovine or caprine holdings.
In order to control caprine and ovine brucellosis, ovine and caprine brucellosis, at least 10% of ovine and caprine animals more than 6 month old were subject to serological tests.

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 (Decision 2006/ 169/ EC)

Free regions

Poland is officialy free of caprine brucellosis during the reporting year.

Monitoring system

Sampling strategy

In order to control caprine and ovine brucellosis, at least 10% of ovine and caprine animals more than 6 month old were subject to serological tests.

Frequency of the sampling

Annual sampling.

Type of specimen taken

Blood

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 not permitted.

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 (Decision 2006/ 169/ EC).

Free regions

Poland is officialy free of caprine brucellosis during the reporting year.

Monitoring system

Sampling strategy

In order to control caprine and ovine brucellosis, at least 10% of ovine and caprine animals more than 6 month old were subject to serological tests.

Frequency of the sampling

Annual sampling

Type of specimen taken

Blood

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 not permitted.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. melitensis	B. abortus	B. suis	Brucella spp., unspecified
Pigs	RVL	animal	4683	0				
Zoo animals, all	RVL	animal	6	0				

Table Bovine brucellosis - 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
Pomorskie	23281	7843	7444	1	1	0	0	94.913	0.013	0.013
Kujawsko-Pomorskie	38241	12617	10362	3	3	0	0	82.127	0.029	0.029
Dolnoslaskie	20872	6918	4780	0	0	0	0	69.095	0	0
Lubelskie	117744	39111	28673	1	1	0	0	73.312	0.003	0.003
Lubuskie	6842	2229	1687	0	0	0	0	75.684	0	0
Lodzkie	76605	26826	21768	0	0	0	0	81.145	0	0
Malopolskie	115867	50182	36704	1	0	1	100	73.142	0.003	0
Mazowieckie	143960	58754	40035	4	4	0	0	68.14	0.01	0.01
Opolskie	13655	6079	4543	1	1	0	0	74.733	0.022	0.022
Slaskie	30613	9573	7544	0	0	0	0	78.805	0	0
Podkarpackie	97199	30899	22933	0	0	0	0	74.219	0	0
Podlaskie	56135	19591	16961	2	2	0	0	86.575	0.012	0.012
Swietokrzyskie	65164	19700	14851	0	0	0	0	75.386	0	0
Warminsko-Mazurskie	27485	9110	7783	5	5	0	0	85.434	0.064	0.064
Wielkopolskie	62903	21159	17771	5	2	1	20	83.988	0.028	0.011
Zachodniopomorskie	13031	4124	2727	1	0	0	0	66.125	0.037	0
Total	909597	324715	246566	24	19	2	8.333	75.933	0.01	0.008
Total - 1	930436	310011	226576	12	12	2	16.667	73.086	0.005	0.005

Footnote

Number of herds which should been checked is 324 715 but when the official veterinarians started the tests they found that not in the all herds the animals were

present or that there were no animals in the age over 12 months. Hence, this figure (246 566)is a number of herds that have been actually tested.
Therefore (taking into account the above notice):
- percentage of the herds coverage shuld be 95.82%
- percentage of the positive herds should be 0.008%
- percentage of the new positive herds should be 0.006%

Table Bovine brucellosis - 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	143280	37349	27905	27905	0	0	0	74.714	0
Kujawsko-Pomorskie	451877	93388	85308	85308	3	3	3	91.348	0.004
Lubelskie	488594	155795	100603	100603	1	1	1	64.574	0.001
Lubuskie	80159	23504	16653	16653	0	0	0	70.852	0
Lodzkie	491830	120621	103429	103429	0	0	0	85.747	0
Malopolskie	293474	111461	86429	86429	1	1	1	77.542	0.001
Mazowieckie (1)	1070622	335739	239105	239105	5	0	4	71.218	0.002
Opolskie (2)	140956	40377	36306	36306	1	0	0	89.918	0.003
Podkarpackie	212905	57480	46149	46149	0	0	0	80.287	0
Podlaskie	804125	197380	199235	199235	2	1	1	100.94	0.001
Pomorskie	206132	61554	49623	49623	1	1	1	80.617	0.002
Slaskie	145341	39401	28635	28635	0	0	0	72.676	0
Swietokrzyskie	220873	52894	35459	35459	0	0	0	67.038	0
Warminsko-Mazurskie	443062	114557	91400	91400	5	3	3	79.786	0.005
Wielkopolskie	793072	229818	146020	69526	5	5	5	63.537	0.003
Zachodniopomorskie	121108	25045	20408	20408	1	1	1	81.485	0.005
Total	6107410	1696363	1312667	1236173	25	16	20	77.381	0.002
Total - 1	6146623	1623440	1152058	1152058	12	12	1217106	70.964	0.001

(1) : One cattle had died before being slaughtered
(2) : One head of cattle in opolskie and podlaskie voivodships had positive result of the testing in 2006 but it was slaughtered in 2007.

Table Bovine brucellosis - 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
Kujawsko-Pomorskie	12617	93388	0	0	0	0	0	0	2	78	0	0	10360	85230
Dolnoslaskie	6918	37349	0	0	0	0	0	0	0	0	0	0	4780	27905
Lubelskie	39111	155795	0	0	0	0	0	0	0	0	0	0	28673	100603
Lubuskie	2229	23504	0	0	0	0	0	0	0	0	0	0	1687	16653
Lodzkie	26826	120621	0	0	0	0	0	0	30	31	0	0	21738	103398
Malopolskie	50182	111461	0	0	0	0	0	0	3	5	0	0	36701	86424
Mazowieckie	58754	335739	0	0	0	0	4	58	0	0	0	0	40031	239047
Opolskie	6079	40377	0	0	0	0	0	0	1	85	0	0	4542	36221
Podkarpackie	30899	57480	0	0	0	0	0	0	1	1	0	0	22932	46148
Podlaskie	19591	197380	0	0	0	0	1	13	1	3	0	0	16959	199219
Pomorskie	7843	61554	0	0	0	0	0	0	1	15	0	0	7443	49608
Slaskie	9573	39401	0	0	0	0	0	0	0	0	0	0	7544	28635
Swietokrzyskie	19700	52894	0	0	0	0	0	0	0	0	0	0	14851	35459
Warminsko-Mazurskie	9110	114557	0	0	0	0	0	0	0	0	0	0	7783	91400
Wielkopolskie	21159	229818	0	0	0	0	0	0	5	5	0	0	17766	146015
Zachodniopomorskie	4124	25045	0	0	0	0	0	0	0	0	0	0	2727	20408
Total	324715	1696363	0	0	0	0	5	71	44	223	0	0	246517	1312373
Total - 1	226576	1152058	0	0	2	38	2	60	9	589	0	0	226563	1151371

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
POLSKA	9436	272958	9436	100	0	0	3216	51145	0	0	0	0	0	0
Total	9436	272958	9436	100	0	0	3216	51145	0	0	0	0	0	0

Footnote

Includes goats and sheep, altogether.

2.7. YERSINIOSIS

2.7.1. General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

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 2006 only 20 ZOO animals (monkeys) were tested with negative results. No data were reported from food.

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.

2.7.2. Yersiniosis in humans

2.7.3. Yersinia in foodstuffs

2.7.4. Yersinia in animals

A. Yersinia enterocolitica in pigs

Control program/ mechanisms

The control program/ strategies in place

There was no active monitoring of yersiniosis of animals carried out in Poland.

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
Monkeys	RVL	animal	20	0					

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

Trichinellosis is an obligatory registrated disease. All slaughtered pigs, boars, horses and coypus shall be inspected for the evidence of Trichinella spp.

2.8.2. Trichinellosis in humans

2.8.3. Trichinella in animals

A. Trichinella in pigs

Monitoring system

Sampling strategy

General

Examination for parasite at slaughterhouse under meat hygiene regulations.

Frequency of the sampling

General

Each carcase.

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.

Notification system in place

Trichinellosis is an obligatory registrated disease.

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

In 2006, 21 985 532 pig carcases were tested, among which 28 were positive cases.

B. Trichinella in horses

Monitoring system

Sampling strategy

Examination 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 2006.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified
Pigs	a	animal	21985532	28		28
Solipeds, domestic						
horses	a	animal	32648	0		
Wild boars						
wild	a	animal	78650	321		321
Bears	RVL	animal	1	1		1
Rodents	RVL	animal	1	0		
Other animals	RVL	animal	4	2		2

Footnote

a - The Report RRW-6 for 2006 for Ministry of Agriculture and Rural Development

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 an examination program carried out among ultimate hosts of echincoccus or obligation to eradicate these parasites in dogs.
Testing for detection of echincoccus is a part of post-mortem inspection of the slaughter animals. It is a visual inspection of the internal organs of the slaughtered animals. The echincoccus is not 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.

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)	a	animal	1426765	16			16
Sheep	a	animal	21266	1309			1309
Goats	a	animal	111	0			
Pigs	a	animal	21985532	744260			744260

Footnote

a - the report RRW-6 for 2006 for Ministry of Agriculture and Rural Development (a number of animals examined by the official veterinarians in the slaughterhouses)

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 registration disease.
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 at regional veterinary laboratories.

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

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 gondii
Cattle (bovine animals)	RVL	animal	10	1
Dogs	RVL	animal	1	1
Cats	RVL	animal	88	3

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 regulation 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.

2.11.2. Lyssavirus (rabies) in animals

A. Rabies in dogs

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.

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 and 4 cases in 2006.
Besides, in 2005, there were 23 cases of rabies in cattle, 1 case in horse, 7 in cats, 84 in foxes, 10 in raccoon dogs,3 in badgers and 1 case in marten. In 2006, there were only 9 cases of rabies in cattle, 6 cases in cats, only 43 in foxes, 15 in racoon dogs and 1 case in marten.

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.

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)	NRL	animal	76	9			9
Sheep	NRL	animal	2	0			
Goats	NRL	animal	7	0			
Dogs	NRL	animal	815	4			4
Cats	NRL	animal	1184	6			6
Bats							
wild	NRL	animal	124	4		4	
Foxes							
wild	NRL	animal	21908	43			43
Raccoon dogs							
wild	NRL	animal	170	15			15
Raccoons							
wild	NRL	animal	1	0			
Wolves							
wild	NRL	animal	1	0			
Badgers							
wild	NRL	animal	59	0			
Marten							
wild	NRL	animal	255	1			1
Wild boars							
wild	NRL	animal	17	0			
Deer	NRL	animal	10	0			
wild							
roe deer	NRL	animal	381	0			
fallow deer	NRL	animal	3	0			
Hares	NRL	animal	12	0			
Other ruminants							
wild	NRL	animal	3	0			
Squirrels	NRL	animal	101	0			
Hedgehogs	NRL	animal	42	0			

Lynx	NRL	animal	1	0			
Zoo animals, all	NRL	animal	3	0			
Pet animals, all	NRL	animal	28	0			
Rodents	NRL	animal	109	0			
Fur animals	NRL	animal	8	0			
Other animals	NRL	animal	47	0			

2.12. Q-FEVER

2.12.1. General evaluation of the national situation

2.12.2. Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella burnetii
Cattle (bovine animals)	RVL	animal	51	0

Footnote

The samplings were carried out at the initiative of the operators.

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

A. Escherichia coli general evaluation

History of the disease and/ or infection in the country

In Poland no permanent monitoring of antimicrobial resistance of indicatory bacteria originating from animals. Data on this subject included in the report are the results of the tests within the frame of multiannual programme 2003-2008 "Protection of animal and public health"(National Veterinary Research Institute).
In 2006 the samplings were carried out as a part of the official controls and sampling at the initiative of the operators. Positive samples were detected in various categories of meat and dairy products.

3.1.2. Escherichia coli, non-pathogenic in animals

A. E.coli in animal

Monitoring system

Sampling strategy

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 E. coli,/ / 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 counties.
Pigs were sampled at 8 slaughterhouses, whereas cattle, broilers, turkeys and geese at, respectively, 10, 5, 5, and 4 locations. Rectal swabs (cattle and pigs) or a caecum contents (poultry) were refered to the laboratory by county veterinary officers.

Type of specimen taken

Other: 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 ART. Growth inhibition zone diameters were automatically read.

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 stains 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. Poultry / E. coli/ showed higher resistance than those from swine. Quinolone resistance in broilers and other poultry species was higher than in swine isolates.

Additional information

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

Table Antimicrobial susceptibility testing of E. coli in animals

n = Number of resistant isolates	E. coli									
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**		**Geese**	
Isolates out of a monitoring programme	yes		yes		yes		yes		yes	
Number of isolates available in the laboratory	193		92		21		116		16	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Tetracyclines										
Tetracyclin	191	19	91	40	21	3	116	58	16	7
Amphenicols										
Chloramphenicol	186	1	92	4	21	0	116	15	16	0
Cephalosporins										
Cefuroxim	193	0	92	1	21	0	116	2	16	0
Fluoroquinolones										
Enrofloxacin	192	0	92	2	21	0	116	20	16	1
Quinolones										
Nalidixic acid	193	3	91	6	21	11	116	41	16	3
Sulfonamides										
Sulfonamide	193	7	92	17	21	1	113	21	16	4
Trimethoprim	192	5	92	9	21	1	115	14	16	4
Aminoglycosides										
Streptomycin	188	13	92	34	21	6	113	19	16	5
Gentamicin	193	0	92	2	21	0	116	2	16	0
Penicillins										
Ampicillin	193	24	92	8	21	12	116	60	16	8
Fully sensitive	155		39		2		35		6	
Resistant to 1 antimicrobial	22		20		11		25		2	
Resistant to 2 antimicrobials	3		12		1		10		2	
Resistant to 3 antimicrobials	5		12		5		10		1	
Resistant to 4 antimicrobials	4		5		1		10		2	
Resistant to >4 antimicrobials	4		4		1		26		3	

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

Number of resistant isolates (n) and number of isolates with the concentration µl/ ml) or zone (mm) of inhibition equal to																																
	E. coli																															
	Cattle (bovine animals)																															
Isolates out of a monitoring programme	yes																															
Number of isolates available in the laboratory	193																															
Antimicrobials:	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Tetracyclines																																
Tetracyclin	191	19	12		2	3	1		1								1	2	7	12	14	25	49	17	15	6	4	3	2	2		13
Amphenicols																																
Chloramphenicol	186	1	1														1				1	3	38	48	43	21	11	5	4	3		7
Florfenicol	0																															
Cephalosporins																																
3rd generation cephalosporins	0																															
Cefuroxim	193	0												1			11	12	30	35	49	18	19	2	3	5	5		3			
Fluoroquinolones																																
Ciprofloxacin	0																															
Enrofloxacin	192	0																				3		1		1	8	11	44	4	6	114
Quinolones																																
Nalidixic acid	193	3	3											1	1				1	1	11	20	57	31	24	15	5	3	5	2	1	12
Sulfonamides																																
Sulfonamide	193	7	6			1										1	1					3		3	5	5	13	25	42	10		78
Trimethoprim	192	5	5											1	1							1	11	18	26	31	22	19	21	30	6	
Aminoglycosides																																
Streptomycin	188	13	7		1	2	2	1		1	2	12	28	67	32	15	6	3	4	2	2	1										
Gentamicin	193	0														3	34	38	48	27	14	11	5	4	4	3	2					
Neomycin	0																															
Kanamycin	0																															
Penicillins																																
Ampicillin	193	24	12			2	3	1	4	2	3	2	3	7	9	11	31	16	19	22	13	15	10	4	3	1						
Trimethoprim + sulfonamides	0																															

Footnote

The results come from research project run at NVRI.

Table Breakpoints used for antimicrobial susceptibility testing in Animals

Test Method Used

- Disc diffusion
- Agar dilution
- Broth dilution
- E-test

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							30	18	15	12
Florfenicol										
Tetracyclines										
Tetracyclin							30	19	16	14
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin							5	23	20	16
Quinolones										
Nalidixic acid							30	19	16	13
Trimethoprim							5	16	13	10
Sulfonamides										
Sulfonamide							300	17	15	12
Aminoglycosides										
Streptomycin							10	15	13	11
Gentamicin							10	15	13	12
Neomycin										
Kanamycin										
Trimethoprim + sulfonamides										
Cephalosporins										
Cefuroxim							10	18	16	14
3rd generation cephalosporins										
Penicillins										
Ampicillin							10	17	15	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 as a part of the official controls and at the initiative of the operators.

4.1.2. Histamine in foodstuffs

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	V	295	34	31	3		

Footnote

V=varied,10g or 200g
The samplings were carried out as a part of the official controls and sampling at the initiative of the operators.

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

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

There was no monitoring programme of Staphylococcal enterotoxins realized 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

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					
made from pasteurised milk	RVL	batch	25	368	0
made from raw or low heat-treated milk	30	batch	25	30	0
hard					
made from pasteurised milk	RVL	batch	25	5	0
Cheeses made from sheep's milk					
soft and semi-soft	RVL	batch	25	1	0
Dairy products (excluding cheeses)					
milk powder and whey powder	RVL	batch	25	7	0
dairy products, not specified	RVL	batch	25	2	0

Footnote

The samplings were carried out as a part of the official controls and sampling at the initiative of the operators.

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 Sanitary-Epidemiological Stations at Voivodship level and 15 Border Sanitary-Epidemiological Stations. The Department of Epidemiology, at the National Institute of Hygiene (NIH) in Warsaw, performs analyses for the whole country.
As the poisonings are reported at Poviat level, the State Poviat Sanitary Inspector sends the notification to State Voivodship Sanitary Inspector on a special application form. Depending on the assessment of the level of epidemiological threat, State Voivodship Sanitary Inspector decides, in cooperation with Veterinary Inspection bodies, on the course of action taken at Voivodship level to control the outbreak. Then the State Voivodship Sanitary Inspector submits a report on food poisoning/ infection cases to the Department of Epidemiology in the National Institute of Hygiene, which, pursuant to respective agreements, collects, analyzes, verifies and disseminates information regarding the outbreak in the country, and to the Department of Disease Surveillance in the Chief Sanitary Inspectorate, also on a specified application form. Reports which contain information e.g. on cases of food poisonings are systematically placed on widely accessible National Institute of Hygiene Websites.

Description of the types of outbreaks covered by the reporting:

In accordance with the definition set forth in the Polish Act of 11 March 2004 on animal health protection and control of communicable animal diseases (Journal of Laws. No 69, item 625, as amended) the following shall be considered outbreaks of food-borne zoonotic diseases:
- at least two cases of food-borne zoonotic infection of people in specific conditions or of infection with zoonotic agent, or

- a situation where the number of actual disease cases exceeds the number of expected cases and is connected with one food source, or such a connection is likely.
The reporting system covered the outbreak household and general outbreaks.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

The estimated incidence of human cases of Salmonella in 2004 and 2005 is about 40 cases/ I 00.000 inhabitants. Number of outbreaks of Salmonella food poisoning due to eggs and eggs preparations were respectively in 2004 and 2005: 165 and 222 outbreaks where the food traced back were eggs, 17 and 30 outbreaks where the food traced back were egg preparations.
Salmonella Enteritidis was responsible for almost all the reported outbreaks.
A total of 389 foodborne infections and intoxications involving 6611 cases were reported in 2006 (only outbreaks involving 4 person or more) and 172 foodborne outbreaks (involving 2-3 persons and 410 cases).

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 species , the predominant serotype was S.Enteritidis (47% of the outbreaks).

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

More than 50% of the outbreaks were reported to be 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 predominate in the clinical picture of human cases. In 2006 about 30% of persons reported to be affected by the outbreaks needed hospitalization, one death was reported as a result of mushroom intoxication.

Control measures or other actions taken to improve the situation

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

Additional information

Cooperation between authorities employed to take action in cases of outbreaks amongst human population in Poland was specified in:
- the Ordinance of the Minister of Health of 7 April 2006 on the cooperation between the State

Sanitary Inspectorate, Veterinary Inspectorate and State Environmental Protection Inspectorate regarding control of infectious diseases (Journal of Laws. of 2006 no 73, item 516), which is a statutory delegation, referred to in Article 4 of the Act of 6 September 2001 on infectious diseases and infections (Journal of Laws.of 2001 No 125, item 1384, as amended).

- Ordinance of the Council of Ministers of 23 April 2006 on the cooperation between the Veterinary Inspectorate, State Sanitary Inspectorate, State Pharmaceutical Inspectorate, Trade Inspectorate, Road Transport Inspectorate, Inspection of Marketing Quality of Agricultural and Food Products and local administration units in control of infectious animal diseases, including zoonotic diseases (Journal of Laws. of 2006 No 83, item 575), issued on the basis of Article 62 (2) of the Act of 11 March 2004 on animal health protection and control

Table Foodborne outbreaks in humans

Causative agent	General outbreak	Household outbreak	Total Number of persons			Food implicated			Type of evidence for implication of the food	Place where food was consumed	Contributing factors
			ill (in total)	died	in hospital	Food (sub)category	Suspected as a source	Confirmed as a source			
1	2	3	4	5	6	7			8	9	10
Bacillus - B. cereus	1		15	0	0	unknown				kindergarten	
Campylobacter		1	1	0	1	dairy products	x		epidemiology	private home	
Campylobacter		1	2	0	0	poultry products	x		epidemiology	private home	
Campylobacter		1	4	0	0	broiler meat and eggs	x		epidemiology	restaurant	
Clostridium - C. botulinum		1	2	0	2	fish	x		epidemiology	private home	
Clostridium - C. botulinum		1	4	0	4	mushroom	x		epidemiology	private home	
Clostridium - C. botulinum		3	7	0	7	meat	x		epidemiology	private home	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified		1	14	0	3	dairy products	x		epidemiology	restaurant	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified		2	7	0	4	raw meat and eggs	x		epidemiology	private home	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified		3	16	0	5	water	x		epidemiology	unknown	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified		5	106	0	6	unknown				unknown	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified	1		3	0	3	dairy products		x	laboratory	children's home	
Escherichia coli, pathogenic - E.coli, pathogenic, unspecified	3		34	0	1	unknown				unknown	
Food borne viruses - adenovirus		1	2	0	2	unknown				unknown	
Food borne viruses - adenovirus	1		11	0	0	poultry products	x		epidemiology	hotel	
Food borne viruses - adenovirus	2		40	0	17	vegetables	x		epidemiology	hotel, hospital	
Food borne viruses - adenovirus	5		182	0	22	unknown				hospital, school	
Food borne viruses - calicivirus (including norovirus)		2	99	0	4	unknown				restaurant	
Food borne viruses - calicivirus (including norovirus)	7		113	0	68	unknown				hotel	
Food borne viruses - hepatitis A virus		1	5	0	5	unknown				private home	
Food borne viruses - hepatitis A virus	2		62	0	62	meat	x		epidemiology	hospital	
Food borne viruses - rotavirus		1	2	0	2	fruits	x		epidemiology	private home	
Food borne viruses - rotavirus		3	24	0	6	unknown				unknown	
Food borne viruses - rotavirus	1		3	0	3	vegetables	x		epidemiology	day care center	
Food borne viruses - rotavirus	8		72	0	17	unknown				unknown	

Klebsiella	2		107	0	1	dairy products		x	laboratory	hospital	
Salmonella - S. Enteritidis		1	2	0	2	fruits	x		epidemiology	private home	
Salmonella - S. Enteritidis		1	3	0	3	fish	x		epidemiology	private home	
Salmonella - S. Enteritidis		1	4	0	0	dairy products	x		epidemiology	private home	
Salmonella - S. Enteritidis		1	55	0	4	vegetables	x		epidemiology	private home	
Salmonella - S. Enteritidis		2	7	0	4	broiler meat	x		epidemiology	private home	
Salmonella - S. Enteritidis		2	12	0	6	fish and eggs		x	laboratory	bistro	
Salmonella - S. Enteritidis		2	24	0	4	bakery products	x		epidemiology	private home	
Salmonella - S. Enteritidis		2	54	0	7	broiler meat and eggs		x	laboratory	private home	
Salmonella - S. Enteritidis		5	31	0	18	salad with egg products		x	laboratory	private home	
Salmonella - S. Enteritidis		6	20	0	15	meat and eggs		x	epidemiology	private home, restaurant	
Salmonella - S. Enteritidis		12	67	0	33	poultry meat and eggs		x	epidemiology, leboratory	private home	
Salmonella - S. Enteritidis		13	80	0	29	raw meat and eggs		x	laboratory	private home	
Salmonella - S. Enteritidis		13	81	0	37	meat		x	laboratory	private home	
Salmonella - S. Enteritidis		17	75	0	54	dairy and egg products		x	epidemiology	private home	
Salmonella - S. Enteritidis		17	91	0	46	dairy products with eggs	x		epidemiology	private home	
Salmonella - S. Enteritidis		37	297	0	143	eggs and egg products		x	epidemiology, laboratory	private home, bistro	
Salmonella - S. Enteritidis		37	382	0	178	unknown				unknown	
Salmonella - S. Enteritidis		44	428	0	169	bakery products with eggs	x		epidemiology	private home, school	
Salmonella - S. Enteritidis	1		3	0	3	salad with egg products	x		epidemiology	private home	
Salmonella - S. Enteritidis	1		33	0	1	bakery products		x	laboratory	private home	
Salmonella - S. Enteritidis	1		48	0	0	dairy products	x		epidemiology	private home	
Salmonella - S. Enteritidis	1		77	0	11	poultry meat and eggs	x		epidemiology	private home	
Salmonella - S. Enteritidis	2		7	0	4	dairy and egg products	x		epidemiology	private home	
Salmonella - S. Enteritidis	2		14	0	7	broiler meat	x		epidemiology	private home	
Salmonella - S. Enteritidis	4		36	0	22	meat and eggs	x		epidemiology	private home	
Salmonella - S. Enteritidis	4		109	0	63	meat	x		epidemiology	hospital, kindergarten	
Salmonella - S. Enteritidis	5		27	0	11	raw meat and eggs	x		epidemiology	private home, restaurant	
Salmonella - S. Enteritidis	5		27	0	14	dairy products with eggs	x		epidemiology	private home, restaurant	
Salmonella - S. Enteritidis	10		69	0	29	eggs and egg products		x	laboratory, epidemiology	private home, day care center	
Salmonella - S. Enteritidis	11		193	0	34	unknown				unknown	
Salmonella - S. Enteritidis	11		207	0	61	bakery products with eggs		x	laboratory	private home	
Salmonella - S. Hadar		1	25	0	0	unknown				restaurant	
Salmonella - S. Hadar	1		2	0	0	unknown				hospital	
Salmonella - S. Infantis		1	3	0	2	dairy products with eggs	x		epidemiology	private home	
Salmonella - S. Infantis		1	3	0	2	eggs and egg products		x	laboratory	private home	
Salmonella - S. Newport	1		14	0	5	unknown				dormitory	
Salmonella - S. Typhimurium		1	9	0	4	dairy products with eggs	x		epidemiology	private home	
Salmonella - S. Typhimurium		3	65	0	5	unknown				unknown	
Salmonella - S. Typhimurium	2		106	0	3	unknown				dormitory, other	
Salmonella - S. Virchow		1	3	0	2	unknown				private home	
Salmonella - Salmonella spp.		1	2	0	2	dairy products with eggs	x		epidemiology	private home	

Salmonella - Salmonella spp.		1	2	0	2	raw meat and eggs		x	laboratory	private home	
Salmonella - Salmonella spp.		1	3	0	0	broiler meat and eggs	x		epidemiology	private home	
Salmonella - Salmonella spp.		1	3	0	3	eggs and egg products	x		epidemiology	private home	
Salmonella - Salmonella spp.		1	7	0	6	dairy and egg products	x		epidemiology	private home	
Salmonella - Salmonella spp.		3	8	0	5	unknown				private home	
Salmonella - Salmonella spp.	1		34	0	25	broiler meat		x	laboratory	hospital	
Shigella		2	8	0	2	unknown				unknown	
Staphylococcus - S. aureus		1	7	0	6	eggs and egg products		x	laboratory	children's home	
Staphylococcus - S. aureus		1	8	0	0	dairy products		x	laboratory	camp	
Staphylococcus - S. aureus		1	11	0	0	broiler meat	x		epidemiology	private home	
Staphylococcus - S. aureus		1	54	0	1	meat		x	laboratory	hotel	
Staphylococcus - S. aureus		4	80	0	9	unknown				restaurant, camp	
Staphylococcus - S. aureus	1		28	0	0	salad with egg products		x	laboratory	camp	
Staphylococcus - S. aureus	1		58	0	27	dairy products		x	laboratory	dormitory	
Staphylococcus - S. aureus	7		143	0	22	unknown				restaurant, hotel	
Toxins - mushroom toxins		22	55	1	55	mushroom		x	laboratory	private home	
Trichinella - Trichinella spp., unspecified		7	127	0	93	meat		x	laboratory	private home	
Unknown		1	3	0	0	dairy and egg products	x		epidemiology	private home	
Unknown		1	3	0	0	water				private home	
Unknown		1	4	0	3	poultry meat and eggs	x		epidemiology	private home	
Unknown		1	5	0	0	bakery products	x		epidemiology	private home	
Unknown		1	5	0	5	salad with egg products	x		epidemiology	private home	
Unknown		1	10	0	0	vegetables				bistro	
Unknown		2	10	0	0	meat and eggs	x		epidemiology	private home	
Unknown		3	9	0	7	dairy products with eggs	x		epidemiology	private home	
Unknown		4	32	0	9	bakery products with eggs	x		epidemiology	private home	
Unknown		5	58	0	8	meat	x		epidemiology	private home	
Unknown		5	65	0	20	eggs and egg products	x		epidemiology	private home, camp	
Unknown		9	204	0	34	unknown				hotel, hospital	
Unknown		16	76	0	45	unknown				private home	
Unknown		33	382	0	103	unknown				unknown	
Unknown	1		2	0	0	bakery products	x		epidemiology	private home	
Unknown	1		4	0	0	bakery products with eggs	x		epidemiology	private home	
Unknown	1		5	0	3	salad with egg products	x		epidemiology	private home	
Unknown	1		6	0	0	dairy products with eggs	x		epidemiology	residential home	
Unknown	1		8	0	1	poultry meat and eggs	x		epidemiology	kindergarten	
Unknown	1		13	0	2	fruits	x		epidemiology	residential home	
Unknown	1		17	0	0	dairy products	x		epidemiology	residential home	
Unknown	1		40	0	0	poultry products	x		epidemiology	camp	
Unknown	2		9	0	3	unknown				private home	
Unknown	2		68	0	3	broiler meat and eggs	x		epidemiology	dormitory	
Unknown	3		26	0	0	eggs and egg products	x		epidemiology	hotel,bistro	
Unknown	7		223	0	13	meat	x		epidemiology	hotel, canteen	
Unknown	26		581	0	228	unknown				hotel, restaurant	
Unknown	30		738	0	53	unknown				unknown	