ZOONOSES MONITORING

IRELAND

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

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

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

IN 2007

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

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

Laboratory name	Description	Contribution
CVRL	Central Veterinary Research Laboratory (DAFF official laboratory) Laboratories approved by the Department of Agriculture Fisheries and Food (DAFF)	Samples taken at processing plants and submitted to DAFF approved laboratories for analysis (Salmonella). Serotyping performed at the CVRL
CMCL	Central meat Control Laboratory	Samples taken at processing plants and submitted to the CMCL (a Department of Agriculture, Fisheries and Food officical laboratory) for analysis (Salmonella, Listeria monocytogenes and some Campylobacter)
DAFF	Department of Agriculture, Fisheries and Food	Surveillance samples taken as an extension of the Enhanced Poultry Monitoring Programme which commenced in 2000. Samples were taken at processing plants and submitted to a DAFF approved, private laboratory for analysis (Salmonela and Campylobacter). Included this year are samples taken under a programme to monitor industry`s own processing hygiene checks. Also, samples taken at processing plants and submitted to a DAFF official laboratory for analysis (Salmonella).
SFPA	Sea Fisheries Protection Authority (formerly Department of Communications, Marine and Natural Resources (DCMNR) approved laboratories	Samples taken at processing plants and submitted to SFPA approved laboratories for analysis (Salmonella and Listeria spp)
DSL	Dairy Science Laboratories	Samples taken at prcessing plants and submitted to DAFF official laboratories for analysis (Salmonella and Listeria spp).

OFML	Official Food Microbiology Laboratories	The majority of samples taken at retail level (catering and retail premises). A small % of samples taken from Distributors/ Transporters, Manufacturers/ packers and Primary Producers. Samples submitted to Official Food Microbiology Laboratories for analysis and include routine samples, samples taken for national survey programmes and samples arising from complaints.

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

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

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1. ANIMAL POPULATIONS

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

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*	Number of holdings	Year*
Cattle (bovine animals)	calves (under 1 year)			11584		1849339			
	in total	112931		1772446		6162266			
Ducks	meat production flocks	16						3	
	in total	16						3	
Gallus gallus (fowl)	breeding flocks, unspecified - in total	93		605000		630000		70	
	grandparent breeding flocks for meat production line	18		79174		83000		7	
	parent breeding flocks for meat production line	93		605000		630000		70	
	breeding flocks for meat production line - in total	93		605000		630000		70	
	laying hens	400		1900000		2000000		267	
	grandparent breeding flocks, unspecified - in total	18		79174		83000		7	
	broilers	300		63514000		10000000		250	
	in total	811		66098174		12713000		594	
Geese	meat production flocks	2		25000		8000		10	
	in total	2		25000		8000		10	
Pigs	breeding animals	339		94000		165000		339	
	fattening pigs	390		2476000		1422000		390	
	in total	729		2570000		1587000		729	
Sheep	in total	35006	2006			3601064	2006		
Turkeys	meat production flocks	126		2235500		700000		65	
	breeding flocks, unspecified - in total	11		24000		28000		5	
	parent breeding flocks	11		24000		28000		5	
	in total	137		2259500		728000		70	

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

2.1.2. Salmonellosis in humans

2.1.3. Salmonella in foodstuffs

Table Salmonella in poultry meat and products thereof (Part A)

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Kentucky	S. Paratyphi B	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Bareilly	S. Virchow	S. Mbandaka	S. Derby	S. Infantis	S. Kottbus	S. Orion	S. Goldcoast	S. Altona	S. Anatum
Meat from broilers (Gallus gallus)																				
fresh																				
- at processing plant	CMCI	single	25g	6	0															
- at retail	OFML	single	25g	4	0															
- at processing plant (processing source 2)	CVRL	single	25g	4932	269	219	3	6	2	1	2	1	2	1	2		1			
- at processing plant (processing source 3)	DAFF	single	Various	112	7	5														
- at processing plant (processing source 4)	DAFF	batch	Various	261	30	28		1							1					
meat products																				
raw but intended to be eaten cooked																				
- at processing plant	CMCI	single	25g	101	6	3	1	1												
- at retail	OFML	single	25g	8	0															
- at processing plant (processing source 2)	CVRL	single	25g	1081	18	3	2	6				1	1							

cooked, ready-to-eat																				
- at processing plant	CMCI	single	25g	141	0															
- at retail	OFMI	single	25g	980	1												1			
- at processing plant (processing source 2)	CVRL	single	25g	3335	1															
- at retail	OFMI	single	25g	128	0															
Meat from turkey																				
fresh																				
- at processing plant	CMCI	single	25g	14	0															
- at processing plant (processing source 2)	CVRL	single	25g	475	4	1										2				
- at processing plant (processing source 3)	DAFF	single	Various	12	0															
- at processing plant (processing source 4)	DAFF	batch	Various	12	0															
meat products																				
raw but intended to be eaten cooked																				
- at processing plant	CMCI	single	25g	10	1	1														
- at processing plant (processing source 2)	CVRL	single	25g	181	1															1
cooked, ready-to-eat																				
- at processing plant	CMCI	single	25g	47	0															
- at retail	OFMI	single	25g	140	0															
- at processing plant (processing source 2)	CVRL	single	25g	575	0															
- at retail	OFMI	single	25g	13	0															
Meat from duck																				
fresh																				
- at processing plant	CVRL	single	25g	142	2															
- at processing plant (processing source 2)	DAFF	single	Various	10	7					4										

meat products																					
cooked, ready-to-eat																					
- at processing plant	CVRL	single	25g	2	0																
- at retail	OFML	single	25g	20	0																
Meat from poultry, unspecified																					
meat products																					
raw but intended to be eaten cooked																					
- at processing plant	CMCI	single	25g	31	0																
cooked, ready-to-eat																					
- at processing plant	CMCI	single	25g	66	0																

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

Table Salmonella in poultry meat and products thereof (Part B)

	S. Schwarzengrund	S. Newport	S. Agona	S. Brandenburg	S. Livingstone	S. Indiana	S. Corvallis
Meat from broilers (Gallus gallus)							
fresh							
- at processing plant							
- at retail							
- at processing plant (processing source 2)		1	26		1	1	
- at processing plant (processing source 3)			2				
- at processing plant (processing source 4)							
meat products							
raw but intended to be eaten cooked			1				
- at processing plant							
- at retail							
- at processing plant (processing source 2)			4				1
cooked, ready-to-eat							
- at processing plant							
- at retail							
- at processing plant (processing source 2)			1				

- at retail							
Meat from turkey							
fresh							
- at processing plant							
- at processing plant (processing source 2)				1			
- at processing plant (processing source 3)							
- at processing plant (processing source 4)							
meat products							
raw but intended to be eaten cooked							
- at processing plant							
- at processing plant (processing source 2)							
cooked, ready-to-eat							
- at processing plant							
- at retail							
- at processing plant (processing source 2)							
- at retail							
Meat from duck							
fresh							
- at processing plant			2				
- at processing plant (processing source 2)	1			2			
meat products							
cooked, ready-to-eat							
- at processing plant							
- at retail							

Meat from poultry, unspecified									
meat products									
raw but intended to be eaten cooked									
- at processing plant									
cooked, ready-to-eat									
- at processing plant									

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch" . For these samples the sampling programme is Monitoring.

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	S. Dublin	S. Agona
Cheeses made from goats' milk										
unspecified										
- at retail	OFML	single	25g	4	0					
Cheeses made from sheep's milk										
- at retail	OFML	single	25g	1	0					
Dairy products (excluding cheeses)										
milk powder and whey powder										
- at processing plant	DSL	batch	Various	83	0					
- at processing plant (processing source 2)	CVRL	single	Not Stated	5814	0					
ice-cream										
- at retail	OFML	single	25g	342	0					
made from pasteurised milk										
- at processing plant	DSL	batch	Various	84	0					
butter										
- at retail	OFML	single	25g	3	0					
made from raw or low heat-treated milk										
- at processing plant	DSL	batch	Various	3	0					
made from pasteurised milk										
- at processing plant	DSL	batch	Various	2	0					
cream										
- at retail	OFML	single	25g	62	0					
dairy desserts										
- at retail	OFML	single	25g	6	0					
dairy products, not specified										
- at retail	OFML	single	25g	61	0					
made from pasteurised milk										
- at processing plant	DSL	batch	Various	18	0					

- at processing plant	CVRL	single	Not Stated	5896	1					1
Milk from other animal species or unspecified										
- at retail	OFML	single	25g	6	0					
raw										
- at processing plant	CVRL	single	Not Stated	2	1				1	
pasteurised										
- at processing plant	CVRL	single	Not Stated	110	0					
Cheeses, made from unspecified milk or other animal milk										
soft and semi-soft										
- at retail	OFML	single	25g	2	0					
unspecified										
- at retail	OFML	single	25g	158	0					
made from raw or low heat-treated milk										
- at processing plant	DSL	batch	Various	115	2			2		

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.
DSL: Batches comprised of 1 - 30 samples with each sample of weight 25g.

Table Salmonella in red meat and products thereof (Part A)

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Livingstone	S. Rissen	S. Altona	S. Bredeney	S. Manhattan	S. Dublin	S. Infantis	S. Poona	S. Butantan	S. Mbandaka	S. Reading	S. Agona
Meat from pig																				
fresh																				
- at processing plant	CMCL	single	25g	22	0															
- at processing plant (processing source 2)	CVRL	single	25g	1992	58	1	32	1			1	3			1	1				1
minced meat																				
intended to be eaten cooked																				
- at processing plant	CMCL	single	25g	1	0															
meat products																				
raw but intended to be eaten cooked																				
- at processing plant	CMCL	single	25g	126	3		3													
- at retail	OFML	single	25g	4	0															
- at processing plant (processing source 2)	CVRL	single	25g	4705	47		17		1			9	1				1	1	1	
cooked, ready-to-eat																				
- at processing plant	CMCL	single	25g	162	4															

- at retail	OFML	single	25g	882	0														
- at processing plant (processing source 2)	CVRL	single	25g	4114	5		1								1			1	
- at retail	OFML	single	25g	69	0														
Meat from bovine animals																			
fresh																			
- at processing plant	CMCL	single	25g	66	0														
- at retail	OFML	single	25g	9	0														
- at processing plant (processing source 2)	CVRL	single	25g	22905	27	1	9			1	1			7		1			1	1
minced meat																			
intended to be eaten cooked																			
- at processing plant	CMCL	single	25g	23	0														
- at retail	OFML	single	25g	38	0														
meat products																			
raw but intended to be eaten cooked																			
- at processing plant	CMCL	single	25g	132	0														
- at processing plant (processing source 2)	CVRL	single	25g	12123	5		2			1									
cooked, ready-to-eat																			
- at processing plant	CMCL	single	25g	142	0														
- at retail	OFML	single	25g	329	0														
- at processing plant (processing source 2)	CVRL	single	25g	1371	3		1												
- at retail	OFML	single	25g	60	0														
Meat from sheep																			
fresh																			
- at processing plant	CMCL	single	25g	23	0														
- at processing plant (processing source 2)	CVRL	single	25g	1508	2		1		1										

minced meat																				
intended to be eaten cooked																				
- at processing plant	CMCL	single	25g	1	0															
meat products																				
raw but intended to be eaten cooked																				
- at processing plant	CMCL	single	25g	3	0															
- at processing plant (processing source 2)	CVRL	single	25g	675	0															
cooked, ready-to-eat																				
- at processing plant	CMCL	single	25g	9	0															
- at processing plant (processing source 2)	CVRL	single	25g	90	0															
- at retail	OFML	single	25g	30	0															
- at retail	OFML	single	25g	5	0															
offal																				
- at processing plant	CMCL	single	25g	5	0															
Meat, mixed meat																				
meat products																				
cooked, ready-to-eat																				
- at processing plant	CMCL	single	25g	24	0															
- at processing plant (processing source 2)	CVRL	single	25g	1	0															
- at retail	OFML	single	25g	49	0															
- at retail	OFML	single	25g	8	0															
Meat from other animal species or not specified																				
fresh																				
- at processing plant	CVRL	single	25g	3498	13		2	1		7						2				
meat products																				
raw but intended to be eaten cooked																				

- at processing plant	CVRL	single	25g	1728	7		2	1		2				1						
- at retail	OFML	single	25g	6	0															
cooked, ready-to-eat																				
- at processing plant	CVRL	single	25g	3282	2		1													
- at retail	OFML	single	25g	234	0															
- at retail	OFML	single	25g	62	0															
minced meat																				
intended to be eaten cooked																				
- at retail	OFML	single	25g	2	0															

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

Table Salmonella in red meat and products thereof (Part B)

	S. Brandenburg	S. Heidelberg	S. Give	S. Panama	S. London	S. Derby	S. Ohio	S. Kentucky
Meat from pig								
fresh								
- at processing plant	1							
- at processing plant (processing source 2)		1		2	4	7		2
minced meat								
intended to be eaten cooked								
- at processing plant								
meat products								
raw but intended to be eaten cooked								
- at processing plant								
- at retail								
- at processing plant (processing source 2)	3				1	12		
cooked, ready-to-eat								
- at processing plant						4		
- at retail								
- at processing plant (processing source 2)						2		
- at retail								
Meat from bovine animals								
fresh								

- at processing plant										
- at retail										
- at processing plant (processing source 2)					3		1			1
minced meat										
intended to be eaten cooked										
- at processing plant										
- at retail										
meat products										
raw but intended to be eaten cooked										
- at processing plant										
- at processing plant (processing source 2)		2								
cooked, ready-to-eat										
- at processing plant										
- at retail										
- at processing plant (processing source 2)									2	
- at retail										
Meat from sheep										
fresh										
- at processing plant										
- at processing plant (processing source 2)										
minced meat										
intended to be eaten cooked										
- at processing plant										
meat products										
raw but intended to be eaten cooked										

- at processing plant								
- at processing plant (processing source 2)								
cooked, ready-to-eat								
- at processing plant								
- at processing plant (processing source 2)								
- at retail								
- at retail								
offal								
- at processing plant								
Meat, mixed meat								
meat products								
cooked, ready-to-eat								
- at processing plant								
- at processing plant (processing source 2)								
- at retail								
- at retail								
Meat from other animal species or not specified								
fresh								
- at processing plant						1		
meat products								
raw but intended to be eaten cooked								
- at processing plant						1		
- at retail								
cooked, ready-to-eat								
- at processing plant			1					
- at retail								
- at retail								

minced meat **intended to be eaten cooked** - at retail									

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch" . For these samples the sampling programme is Monitoring.

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Mbandaka	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Havana	S. Rideau	S. Agona	S. Dublin	S. Infantis
Eggs														
table eggs														
- at retail	OFML	single	25g	16	0									
- at processing plant	CVRL	single	25g	88	1							1		
raw material (liquid egg) for egg products														
- at processing plant	CVRL	single	25g	955	0									
- at retail	OFML	single	25g	7	0									
Egg products														
- at processing plant	CVRL	single	25g	233	0									
- at retail	OFML	single	25g	472	0									
Fishery products, unspecified														
- at retail	OFML	single	25g	98	0									
cooked														
- at retail	OFML	single	25g	297	0									

raw														
- at retail	OFML	single	25g	16	0									
- at retail (smoked)	OFML	single	25g	50	0									
- at processing plant	SFPA	single	25g	22	0									
Crustaceans														
- at processing plant	SFPA	single	25g	9	0									
unspecified														
cooked														
- at retail	OFML	single	25g	28	0									
- at retail	OFML	single	25g	3	0									
Molluscan shellfish														
cooked														
- at retail	OFML	single	25g	10	0									
raw														
- at retail	OFML	single	25g	24	0									
Seeds, sprouted														
ready-to-eat														
- at retail	OFML	single	25g	4	0									
Fruits and vegetables														
- at processing plant	CVRL	single	25g	3477	1							1		
- at retail	OFML	single	25g	263	1	1								
Juice														
fruit juice														
unpasteurised														
- at retail	OFML	single	25g	272	0									
- at retail	OFML	single	25g	9	0									
vegetable juice														
- at retail	OFML	single	25g	29	0									

mixed juice														
- at retail	OFML	single	25g	24	0									
- at retail	OFML	single	25g	12	0									
Infant formula														
dried														
intended for infants below 6 months														
- at processing plant	DSL	batch	Various	12	0									
- at processing plant (intended for infants above 6 months)	DSL	batch	Various	13	0									
- at retail	OFML	single	25g	56	0									
Mushrooms														
- at processing plant	CVRL	single	25g	86	0									
- at retail	OFML	single	25g	4	0									
Other processed food products and prepared dishes														
unspecified														
- at retail	OFML	single	25g	2509	0									
Other food														
- at retail	OFML	single	25g	42	0									
- at processing plant (1)	CVRL	single	25g	19768	11	2		5		1	1		1	1
Sauce and dressings														
- at retail	OFML	single	25g	264	0									
Soups														
- at retail	OFML	single	25g	93	0									
Spices and herbs														
- at retail	OFML	single	25g	42	0									
Bakery products														
desserts														

- at retail	OFML	single	25g	144	0										
- at retail	OFML	single	25g	218	0										
Beverages, non-alcoholic															
- at retail	OFML	single	25g	513	0										
Cereals and meals															
- at retail	OFML	single	25g	190	0										

(1) : Units tested food grade water=375, 3 pos, 1 Dublin, 2 Typhimurium. Foods not specified=2812, 6 pos, 1 Infantis, 1 Mbandaka, 1 Rideau, 3 Typhimurium. Prepared foods to be cooked=8455, 0 pos. Ready-to-eat foods=8120, 2 pos, 1 Havana, 1 Mbandaka. Water bottled/ well=6, 0 pos.

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.
DSL: Batches comprised of 1 - 30 samples with each sample of weight 25g.

2.1.4. Salmonella in animals

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	S. Hadar	S. Infantis	S. Virchow	Salmonella spp., unspecified	S. Mbandaka	S. Kentucky	S. Senftenberg	S. Derby
Gallus gallus (fowl)														
grandparent breeding flocks for meat production line during production period	NCP	flock	2	0										
parent breeding flocks for meat production line during production period	NCP	flock	487	27							15	12		

Footnote

NCP - National Control Programme

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. Senftenberg	S. Mbandaka	S. Schwarzengrund	S. Brandenburg	S. Indiana	S. Derby
Gallus gallus (fowl)													
laying hens	NCP	flock	337	2				1					1
Ducks	NCP	flock	22	7						1	6		
Turkeys	NCP	flock	27	4					1			3	

Footnote

NCP - National Control Programme

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Dublin
Pigeons	Diagnostic	animal	20	0	0	0	0	0
Guinea fowl	Diagnostic	animal	0	0	0	0	0	0
Quails	Diagnostic	animal	0	0	0	0	0	0
Pheasants	Diagnostic	animal	52	0	0	0	0	0
Partridges	Diagnostic	animal	0	0	0	0	0	0
Ostriches	Diagnostic	animal	0	0	0	0	0	0
Zoo animals, all								
(Exotic(zoo))	Diagnostic	animal	31	1	0	0	0	1
Swans	Diagnostic	animal	9	0	0	0	0	0

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. London	S. Derby	S. Dublin	S. Agona	S. enterica subsp. arizonae	S. Rissen	S. enterica subsp. diarizonae
Cattle (bovine animals)														
calves (under 1 year)	Diagnostic	animal	4982	97	0	13	0	0	0	84	0	0		1
others	Diagnostic	animal	2740	73	0	15	0	0	0	57	1			
Sheep	Diagnostic	animal	1132	6	0	2	0	0	0	0	0	2	1	1
Goats	Diagnostic	animal	49	0	0	0	0	0	0	0	0			
Pigs	Diagnostic	animal	0	0	0	0	0	0	0	0	0			
breeding animals		animal	20	1	0	1	0	0	0	0	0			
fattening pigs		animal	398	22	0	20	1		1	0	0			
Solipeds, domestic	Diagnostic	animal	1304	8	0	6	0	2	0	0	0			
Badgers	Diagnostic	animal	9	0	0	0	0	0	0	0	0			
Dogs	Diagnostic	animal	579	1	0	0	0	0	0	1	0			
Deer	Diagnostic	animal	33	0	0	0	0	0	0	0	0			
Zoo animals, all														
(Exotic (zoo))	Diagnostic	animal	66	2	0	0	0	0	0	0	0	1		1

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 marine animal origin								
fish meal		single	25g	2	0			

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Senftenberg	S. Mbandaka
Feed material of cereal grain origin										
barley derived		single	25g	1	0					
wheat derived		single	25g	5	0					
maize derived		single	25g	5	0					
		single	25g	8	0					
Feed material of oil seed or fruit origin										
rape seed derived		single	25g	11	0					
palm kernel derived		single	25g	5	0					
soya (bean) derived		single	25g	14	1				1	
sunflower seed derived		single	25g	2	1					1
Other feed material										
other seeds and fruits		single	25g	1	0					
forages and roughages		single	25g	1	0					
other plants		single	25g	1	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	S. Infantis
Compound feedingstuffs for cattle									
final product		single	25g	69	0				
Compound feedingstuffs for pigs									
final product		single	25g	7	1				1
Compound feedingstuffs for poultry (non specified)									
final product		single	25g	4	0				
Compound feedingstuffs for poultry - laying hens									
final product		single	25g	10	0				
Compund feedingstuffs for poultry - broilers									
final product		single	25g	8	0				
Compound feedingstuffs for sheep		single	25g	4	0				
Compound feedingstuffs for horses		single	25g	2	0				
Compound feedingstuffs for fish		single	25g	6	0				

2.1.6. Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovars		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Other animals	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	0	171	0	24	0	5	0	0	0	25
Number of isolates serotyped	N=	0	171	0	24	0	5	0	0	0	25
Number of isolates per type											
S. Agona		0	1	0	0	0	0	0	0	0	0
S. Derby		0	0	0	1	0	0	0	0	0	0
S. Dublin		0	141	0	1	0	0	0	0	0	9
S. Enteritidis		0	1	0	0	0	0	0	0	0	0
S. Kentucky		0	0	0	0	0	1	0	0	0	0
S. London		0	0	0	0	0	0	0	0	0	2
S. Mbandaka		0	0	0	0	0	3	0	0	0	0
S. Rissen		0	0	0	0	0	0	0	0	0	1
S. Typhimurium		0	28	0	21	0	1	0	0	0	8
S. group B		0	0	0	1	0	0	0	0	0	0
S. enterica subsp. arizonae		0	0	0	0	0	0	0	0	0	3
S. enterica subsp. diarizonae		0	0	0	0	0	0	0	0	0	2

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella serovars in food

Serovars		Meat from turkey		Other food		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Meat from duck		Meat from sheep		Meat from other animal species or not specified	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	6		13		35		117		332				5		9		2		22	
Number of isolates serotyped	N=	6	0	13	0	35	0	116	0	331	0	0	0	3	0	5	0	2	0	20	0
Number of isolates per type																					
S. Agona				1		1		1		34				2		2					
S. Altona						1		1													
S. Anatum		1																			
S. Bareilly		1								2											
S. Brandenburg						2		4								2					
S. Bredeney								12													
S. Butantan								1													
S. Corvallis										1											
S. Derby						3		25		1										2	
S. Dublin				1		7								1						1	

S. Enteritidis					1		1		14											
S. Give																			1	
S. Goldcoast									1											
S. Havana			1																	
S. Heidelberg							1													
S. Indiana									1											
S. Infantis			1				1		3											
S. Kentucky	2				3		2		258											
S. Kottbus	2																			
S. Livingstone							1		1								1			
S. London							5													
S. Manhattan							1													
S. Mbandaka			3				1		3											
S. Newport					1				1											
S. Orion									1											
S. Panama							2													
S. Paratyphi B									6											
S. Poona					1		2												2	
S. Reading					1		2													
S. Rideau			1																	
S. Rissen					2														9	
S. Schwarzengrund														1						
S. Typhimurium			5		12		53		2								1		5	
S. Virchow									2											

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Enteritidis phagetypes in animals

Phagetype		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=	0	0	0	1	0	0	0	0	0	0
Number of isolates phagetyped	N=	0	0	0	1	0	0	0	0	0	0
Number of isolates per type											
4		0	0	0	1	0	0	0	0	0	0

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Enteritidis phagetypes in food

Phagetype		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	1		1		14				0	
Number of isolates phagetyped	N=	1	0	1	0	13	0	0	0	0	0
Number of isolates per type											
PT 4						7					
PT 6						6					
PT 8		1		1							

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Typhimurium phagetypes in animals

Phagetype		Solipeds, domestic - horses		Sheep		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	0	4	0	1	0	21	0	13	0	3	0	0
Number of isolates phagetyped	N=	0	3	0	1	0	21	0	13	0	3	0	0
Number of isolates per type													
DT 104		0	3	0	0	0	19	0	0	0	0	0	0
DT 104b		0	0	0	0	0	2	0	4	0	0	0	0
DT 193									4				
DT 40											1		
DT 99									1				
DT 135					1								
U 288									4				
DT 2											1		
DT 56											1		

Footnote

(*) M : Monitoring, C : Clinical

Table Salmonella Typhimurium phagetypes in food

Phagetype		Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Other poultry		Other products of animal origin		Meat from sheep		Meat from other animal species or not specified	
Sources of isolates (*)		M	C	M	C	M	C	M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=	12		53		2				5		1		5	
Number of isolates phagetyped	N=	12	0	47	0	2	0	0	0	5	0	1	0	5	0
Number of isolates per type															
DT 12				2											
DT 104				2		1				2				1	
DT 104b		5		24						2		1		4	
DT 193		2		3											
DT 208				1											
U 302				2											
DT 132						1									
DT 195		3													
U 288				4											
other (1)		2		6											

RDNC			2						1					
U 314			1											

(1) : These figures relate to four different phagetypes that have not been added to the list. They are 120, PTU311, 193 & PT193.

Footnote

(*) M : Monitoring, C : Clinical

2.1.7. Antimicrobial resistance in Salmonella isolates

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

Table Antimicrobial susceptibility testing in S. Agona

n = Number of resistant isolates		
	S. Agona	
	Cattle (bovine animals)	
Isolates out of a monitoring programme		no
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Apramycin	1	0
Framycetin	1	0
Gentamicin	0	0
Kanamycin	0	0
Neomycin	11	0
Streptomycin	0	0
Amphenicols		
Chloramphenicol	0	0
Florfenicol	0	0
Cephalosporins		
Cefalexin	1	0
Cefotaxim	0	0
Fluoroquinolones		
Ciprofloxacin	0	0
Enrofloxacin	1	0
Fully sensitive	1	1
Penicillins		
Amoxicillin / Clavulanic acid	1	0
Penicillin	1	0
Quinolones		
Nalidixic acid	0	0
Resistant to 1 antimicrobial	0	0
Resistant to 2 antimicrobials	0	0
Resistant to 3 antimicrobials	0	0
Resistant to 4 antimicrobials	0	0
Resistant to >4 antimicrobials	0	0
Sulfonamides		
Sulfonamide	0	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	0	0
Trimethoprim + sulfonamides		
Trimethoprim + Sulfamethoxazol	1	0

Table Antimicrobial susceptibility testing of S. Bredeney in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Bredeney
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	6

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	6	0				5	1														.25	32
Streptomycin	32	6	0								2	3	1									2	128
Amphenicols																							
Chloramphenicol	16	6	0									6										2	64
Florfenicol	16	6	0								6											2	64
Cephalosporins																							
Cefotaxim	0.5	6	0		5	1																.06	4
Ceftazidim	2	6	0				6															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	6	0	6																		.008	8
Penicillins																							
Ampicillin	4	6	0						4	2												.5	32
Quinolones																							
Nalidixic acid	16	6	0								5	1										4	64
Sulfonamides																							
Sulfonamide	256	6	1										2	2	1				1			8	1024
Tetracyclines																							
Tetracyclin	8	6	0							5	1											1	64
Trimethoprim	2	6	0					6														.5	32

Table Antimicrobial susceptibility testing in S. Bredeney

n = Number of resistant isolates	S. Bredeney	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		6
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	6	0
Streptomycin	6	0
Amphenicols		
Chloramphenicol	6	0
Cephalosporins		
Cefotaxim	6	0
Ceftazidim	6	0
Fluoroquinolones		
Ciprofloxacin	6	0
Fully sensitive	5	5
Penicillins		
Ampicillin	6	0
Quinolones		
Nalidixic acid	6	0
Resistant to 1 antimicrobial	1	1
Sulfonamides		
Sulfonamide	6	1
Tetracyclines		
Tetracyclin	6	0
Trimethoprim	6	0

Table Antimicrobial susceptibility testing of S. Derby in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Derby
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	9

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	9	0				2	5	2													.25	32
Streptomycin	32	9	0									5	3	1								2	128
Amphenicols																							
Chloramphenicol	16	9	2									7		1	1							2	64
Florfenicol	16	9	2								6	1		2								2	64
Cephalosporins																							
Cefotaxim	0.5	9	0		4	4	1															.06	4
Ceftazidim	2	9	0				3	4	1	1												.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	9	0	9																		.008	8
Penicillins																							
Ampicillin	4	9	1						4	3	1	1										.5	32
Quinolones																							
Nalidixic acid	16	9	0								9											4	64
Sulfonamides																							
Sulfonamide	256	9	3										1	3	1	1		1	2			8	1024
Tetracyclines																							
Tetracyclin	8	9	6							3					6							1	64
Trimethoprim	2	9	2					6	1					2								.5	32

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - Monitoring (Baseline study) - quantitative data [Dilution method]

	S. Derby
	Turkeys - Monitoring (Baseline study)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	6

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	6	0				4	2														.25	32
Streptomycin	32	6	6													6						2	128
Amphenicols																							
Chloramphenicol	16	6	0									6										2	64
Florfenicol	16	6	0								2	4										2	64
Cephalosporins																							
Cefotaxim	0.5	6	0			6																.06	4
Ceftazidim	2	6	0					6														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	6	0	6																		.08	8
Penicillins																							
Ampicillin	4	6	0						3	3												.5	32
Quinolones																							
Nalidixic acid	16	6	0								6											4	64
Sulfonamides																							
Sulfonamide	256	6	6																6			8	1024
Tetracyclines																							
Tetracyclin	8	6	6												6							1	64
Trimethoprim	2	6	0					6														.5	32

Table Antimicrobial susceptibility testing in S. Derby

n = Number of resistant isolates	S. Derby					
	Pigs		**Gallus gallus (fowl) - broilers**		**Turkeys**	
Isolates out of a monitoring programme	yes				yes	
Number of isolates available in the laboratory	9				6	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Gentamicin	9	0			6	0
Streptomycin	9	0			6	6
Amphenicols						
Chloramphenicol	9	2			6	0
Cephalosporins						
Cefotaxim	9	0			6	0
Ceftazidim	9	0			6	0
Fluoroquinolones						
Ciprofloxacin	9	0			6	0
Fully sensitive	1	1				
Penicillins						
Quinolones						
Nalidixic acid	9	0			6	0
Resistant to 1 antimicrobial	5	5				
Resistant to 2 antimicrobials	0	0				
Resistant to 3 antimicrobials	2	2			6	6
Resistant to >4 antimicrobials	1	1				
Sulfonamides						
Sulfonamide	9	3			6	6
Tetracyclines						
Tetracyclin	9	6			6	6
Trimethoprim	9	2			6	0

Table Antimicrobial susceptibility testing in S. Dublin

n = Number of resistant isolates	S. Dublin					
	Gallus gallus (fowl)		**Cattle (bovine animals)**		**Pigs**	
Isolates out of a monitoring programme			no			
Number of isolates available in the laboratory			184			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides						
Apramycin			144	0		
Framycetin			145	0		
Gentamicin			0	0		
Kanamycin			0	0		
Neomycin			145	2		
Streptomycin			36	7		
Amphenicols						
Chloramphenicol			0	0		
Florfenicol			182	3		
Cephalosporins						
Cefalexin			39	4		
Cefotaxim			0	0		
Fluoroquinolones						
Ciprofloxacin			0	0		
Enrofloxacin			183	0		
Fully sensitive			183	156		
Penicillins						
Amoxicillin / Clavulanic acid			184	3		
Penicillin			36	14		
Quinolones						
Nalidixic acid			0	0		
Resistant to 1 antimicrobial			183	17		
Resistant to 2 antimicrobials			183	4		
Resistant to 3 antimicrobials			183	2		
Resistant to 4 antimicrobials			183	3		
Resistant to >4 antimicrobials			183	1		
Sulfonamides						
Sulfonamide			0	0		
Tetracyclines						
Tetracyclin			181	6		
Trimethoprim			0	0		
Trimethoprim + sulfonamides						
Trimethoprim + Sulfamethoxazol			183	10		

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates

S. Enteritidis

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme	no											
Number of isolates available in the laboratory	1											
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Apramycin	0	0										
Framycetin	0	0										
Gentamicin	0	0										
Kanamycin	0	0										
Neomycin	0	0										
Streptomycin	1	0										
Amphenicols												
Chloramphenicol	0	0										
Florfenicol	1	0										
Cephalosporins												
Cefalexin	1	0	0	0								
Cefotaxim	0	0										
Fluoroquinolones												
Ciprofloxacin	0	0										
Enrofloxacin	1	0										
Fully sensitive	1	0										
Penicillins												
Amoxicillin / Clavulanic acid	1	0										
Penicillin	1	1										
Quinolones												
Nalidixic acid	0	0										
Resistant to 1 antimicrobial	1	1										
Resistant to 2 antimicrobials	1	0										
Resistant to 3 antimicrobials	1	0										
Resistant to 4 antimicrobials	1	0										
Resistant to >4 antimicrobials	1	0										
Sulfonamides												
Sulfonamide	0	0										
Tetracyclines												
Tetracyclin	1	0										
Trimethoprim	0	0										
Trimethoprim + sulfonamides												

Table Antimicrobial susceptibility testing of S. Goldcoast in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Goldcoast
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	.06	4
Ceftazidim	2	1	0					1														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0						1													.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0											1								8	1024
Tetracyclines																							
Tetracyclin	8	1	0							1												1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in S. Goldcoast

n = Number of resistant isolates	S. Goldcoast	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Fully sensitive	1	1
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Sulfonamides		
Sulfonamide	1	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing in S. Indiana

n = Number of resistant isolates		
	S. Indiana	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		14
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	14	0
Streptomycin	14	0
Amphenicols		
Chloramphenicol	14	0
Cephalosporins		
Cefotaxim	14	0
Ceftazidim	14	0
Fluoroquinolones		
Ciprofloxacin	14	0
Penicillins		
Ampicillin	14	1
Quinolones		
Nalidixic acid	14	0
Resistant to 2 antimicrobials	13	13
Resistant to 3 antimicrobials	1	1
Sulfonamides		
Sulfonamide	14	14
Tetracyclines		
Tetracyclin	14	14
Trimethoprim	14	0

Table Antimicrobial susceptibility testing of S. Indiana in Turkeys - Monitoring (Baseline study) - quantitative data [Dilution method]

	S. Indiana
	Turkeys - Monitoring (Baseline study)
Isolates out of a monitoring programme (1)	yes
Number of isolates available in the laboratory	14

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	14	0				12	2														.25	32
Streptomycin	32	14	0								3	11										2	128
Amphenicols																							
Chloramphenicol	16	14	0								9	5										2	64
Florfenicol	16	14	0								13	1										2	64
Cephalosporins																							
Cefotaxim	0.5	14	0		12	2																.06	4
Ceftazidim	2	14	0				14															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	14	0	14																		.08	8
Penicillins																							
Ampicillin	4	14	1						13				1									.5	32
Quinolones																							
Nalidixic acid	16	14	0								14											4	64
Sulfonamides																							
Sulfonamide	256	14	14																14			8	1024
Tetracyclines																							
Tetracyclin	8	14	14												14							1	64
Trimethoprim	2	14	0					13	1													.5	32

(1) : Baseline study

Table Antimicrobial susceptibility testing of S. Infantis in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Infantis
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	2	0					2														.25	32
Streptomycin	32	2	1									1				1						2	128
Amphenicols																							
Chloramphenicol	16	2	0									2										2	64
Florfenicol	16	2	0								1	1										2	64
Cephalosporins																							
Cefotaxim	0.5	2	1			1					1											.06	4
Ceftazidim	2	2	1					1					1									.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		.008	8
Penicillins																							
Ampicillin	4	2	2											2								.5	32
Quinolones																							
Nalidixic acid	16	2	0								1	1										4	64
Sulfonamides																							
Sulfonamide	256	2	1												1				1			8	1024
Tetracyclines																							
Tetracyclin	8	2	1							1					1							1	64
Trimethoprim	2	2	0					2														.5	32

Table Antimicrobial susceptibility testing in S. Infantis

n = Number of resistant isolates	S. Infantis	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		2
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	2	0
Streptomycin	2	1
Amphenicols		
Chloramphenicol	2	0
Cephalosporins		
Cefotaxim	2	1
Ceftazidim	2	1
Fluoroquinolones		
Ciprofloxacin	2	0
Penicillins		
Ampicillin	2	2
Quinolones		
Nalidixic acid	2	0
Resistant to 3 antimicrobials	1	1
Resistant to 4 antimicrobials	1	1
Sulfonamides		
Sulfonamide	2	1
Tetracyclines		
Tetracyclin	2	1
Trimethoprim	2	1

Table Antimicrobial susceptibility testing of S. Kottbus in Turkeys - Monitoring (Baseline study) - quantitative data [Dilution method]

	S. Kottbus
	Turkeys - Monitoring (Baseline study)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	3

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	3	0				2		1													.25	32
Streptomycin	32	3	0								1	1		1								2	128
Amphenicols																							
Chloramphenicol	16	3	0								3											2	64
Florfenicol	16	3	0								3											2	64
Cephalosporins																							
Cefotaxim	0.5	3	0		3																	.06	4
Ceftazidim	2	3	0				3															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	3	0	3																		.008	8
Penicillins																							
Ampicillin	4	3	0						2	1												.5	32
Quinolones																							
Nalidixic acid	16	3	0								2	1										4	64
Sulfonamides																							
Sulfonamide	256	3	0											1	2							8	1024
Tetracyclines																							
Tetracyclin	8	3	0							3												1	64
Trimethoprim	2	3	0					3														.5	32

Table Antimicrobial susceptibility testing in S. Kottbus

n = Number of resistant isolates	S. Kottbus	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		3
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	3	0
Streptomycin	3	0
Amphenicols		
Chloramphenicol	3	0
Cephalosporins		
Cefotaxim	3	0
Ceftazidim	3	0
Fluoroquinolones		
Ciprofloxacin	3	0
Fully sensitive	3	3
Penicillins		
Ampicillin	3	0
Quinolones		
Nalidixic acid	3	0
Sulfonamides		
Sulfonamide	3	0
Tetracyclines		
Tetracyclin	3	0
Trimethoprim	3	0

Table Antimicrobial susceptibility testing of S. Livingstone in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Livingstone
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	0								1											2	128
Amphenicols																							
Chloramphenicol	16	1	0								1											2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	.06	4
Ceftazidim	2	1	0				1															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0						1													.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	0							1												1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in S. Livingstone

n = Number of resistant isolates	S. Livingstone	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Fully sensitive	1	1
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Sulfonamides		
Sulfonamide	1	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of S. London in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. London
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0			1																.06	4
Ceftazidim	2	1	0					1														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0							1												.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	1															1				8	1024
Tetracyclines																							
Tetracyclin	8	1	0							1												1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in S. London

n = Number of resistant isolates	S. London	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Resistant to 1 antimicrobial	1	1
Sulfonamides		
Sulfonamide	1	1
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing in S. Manhattan

n = Number of resistant isolates		
	S. Manhattan	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Resistant to 2 antimicrobials	1	0
Sulfonamides		
Sulfonamide	1	1
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of S. Manhattan in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Manhattan
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0					1														.25	32
Streptomycin	32	1	0										1									2	128
Amphenicols																							
Chloramphenicol	16	1	0										1									2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	.06	4
Ceftazidim	2	1	0				1															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0						1													.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	1																1			8	1024
Tetracyclines																							
Tetracyclin	8	1	0								1											1	64
Trimethoprim	2	1	1										1									.5	32

Table Antimicrobial susceptibility testing in S. Montevideo

n = Number of resistant isolates	S. Montevideo	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		2
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	2	0
Streptomycin	2	0
Amphenicols		
Chloramphenicol	2	0
Cephalosporins		
Cefotaxim	2	0
Ceftazidim	2	0
Fluoroquinolones		
Ciprofloxacin	2	0
Fully sensitive	2	2
Penicillins		
Ampicillin	2	0
Quinolones		
Nalidixic acid	2	0
Sulfonamides		
Sulfonamide	2	0
Tetracyclines		
Tetracyclin	2	0
Trimethoprim	2	0

Table Antimicrobial susceptibility testing of S. Montevideo in Turkeys - Monitoring (Baseline study) - quantitative data [Dilution method]

	S. Montevideo
	Turkeys - Monitoring (Baseline study)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	2	0				2															.25	32
Streptomycin	32	2	0									2										2	128
Amphenicols																							
Chloramphenicol	16	2	0									2										2	64
Florfenicol	16	2	0								2											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	.06	4
Ceftazidim	2	2	0				2															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		.008	8
Penicillins																							
Ampicillin	4	2	0						2													.5	32
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0												2							8	1024
Tetracyclines																							
Tetracyclin	8	2	0							2												1	64
Trimethoprim	2	2	0					2														.5	32

Table Antimicrobial susceptibility testing of S. Newport in Turkeys - Monitoring (Baseline study) - quantitative data [Dilution method]

	S. Newport
	Turkeys - Monitoring (Baseline study)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	2

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	2	0				1	1														.25	32
Streptomycin	32	2	0								1	1										2	128
Amphenicols																							
Chloramphenicol	16	2	0								2											2	64
Florfenicol	16	2	0								2											2	64
Cephalosporins																							
Cefotaxim	0.5	2	0		2																	.06	4
Ceftazidim	2	2	0				2															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	2	0	2																		.008	8
Penicillins																							
Ampicillin	4	2	0						1	1												.5	32
Quinolones																							
Nalidixic acid	16	2	0								2											4	64
Sulfonamides																							
Sulfonamide	256	2	0											1	1							8	1024
Tetracyclines																							
Tetracyclin	8	2	0							2												1	64
Trimethoprim	2	2	0					2														.5	32

Table Antimicrobial susceptibility testing in S. Newport

n = Number of resistant isolates	S. Newport	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		2
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	2	0
Streptomycin	2	0
Amphenicols		
Chloramphenicol	2	0
Cephalosporins		
Cefotaxim	2	0
Ceftazidim	2	0
Fluoroquinolones		
Ciprofloxacin	2	0
Fully sensitive	2	2
Penicillins		
Ampicillin	2	0
Quinolones		
Nalidixic acid	2	0
Sulfonamides		
Sulfonamide	2	0
Tetracyclines		
Tetracyclin	2	0
Trimethoprim	2	0

Table Antimicrobial susceptibility testing in S. Oranienburg

n = Number of resistant isolates		
	S. Oranienburg	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Fully sensitive	1	1
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Sulfonamides		
Sulfonamide	1	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of S. Oranienburg in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Oranienburg
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0					1														.25	32
Streptomycin	32	1	0											1								2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0				1															.06	4
Ceftazidim	2	1	0					1														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0							1												.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0										1									8	1024
Tetracyclines																							
Tetracyclin	8	1	0							1												1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in S. Orion

n = Number of resistant isolates	S. Orion	
	Turkeys	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		63
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	63	0
Streptomycin	63	0
Amphenicols		
Chloramphenicol	63	0
Cephalosporins		
Cefotaxim	63	0
Ceftazidim	63	0
Fluoroquinolones		
Ciprofloxacin	63	0
Fully sensitive	58	58
Penicillins		
Ampicillin	63	5
Quinolones		
Nalidixic acid	63	0
Resistant to 1 antimicrobial	5	5
Sulfonamides		
Sulfonamide	63	0
Tetracyclines		
Tetracyclin	63	0
Trimethoprim	63	0

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

	S. Orion Turkeys - Monitoring
Isolates out of a monitoring programme (1)	yes
Number of isolates available in the laboratory	63

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	63	0				57	6														.25	32
Streptomycin	32	63	0								2	59	2									2	128
Amphenicols																							
Chloramphenicol	16	63	0								19	44										2	64
Florfenicol	16	63	0							1	62											2	64
Cephalosporins																							
Cefotaxim	0.5	63	0		17	46																.06	4
Ceftazidim	2	63	0				42	21														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	63	0	63																		.008	8
Penicillins																							
Ampicillin	4	63	5					1	51	6				5								.5	32
Quinolones																							
Nalidixic acid	16	63	0								63											4	64
Sulfonamides																							
Sulfonamide	256	63	0												26	30	7					8	1024
Tetracyclines																							
Tetracyclin	8	63	0						23	40												1	64
Trimethoprim	2	63	0					63														.5	32

(1) : Baseline study

Footnote

Table Antimicrobial susceptibility testing in S. Panama

n = Number of resistant isolates	S. Panama	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Fully sensitive	1	1
Penicillins		
Ampicillin	1	0
Quinolones		
Nalidixic acid	1	0
Sulfonamides		
Sulfonamide	1	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of S. Panama in Pigs - Monitoring (Baseline study: lymph nodes) - quantitative data [Dilution method]

	S. Panama
	Pigs - Monitoring (Baseline study: lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	0									1										2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0								1											2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	.06	4
Ceftazidim	2	1	0				1															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	0							1												.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0												1							8	1024
Tetracyclines																							
Tetracyclin	8	1	0						1													1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - Monitoring - monitoring survey (Baseline Study, lymph nodes) - quantitative data [Dilution method]

	S. Typhimurium
	Pigs - Monitoring - monitoring survey (Baseline Study, lymph nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	41

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	41	0				33	6	2													0.25	32
Streptomycin	32	41	17							1	7	4	2	10	11	6						2	128
Amphenicols																							
Chloramphenicol	16	41	27								9	5		1	26							2	64
Florfenicol	16	41	20							2	11	3	5	17	3							2	64
Cephalosporins																							
Cefotaxim	0.5	41	0		29	8	3	1														0.06	4
Ceftazidim	2	41	1				35	4		1		1										.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	41	2	37	2		2															0.008	8
Penicillins																							
Ampicillin	4	41	31						7	3		2		29								.5	32
Quinolones																							
Nalidixic acid	16	41	2								34	4	1		2							4	64
Sulfonamides																							
Sulfonamide	256	41	31									3	2	5					31			8	1024
Tetracyclines																							
Tetracyclin	8	41	33						1	6	1		3	16	14							1	64
Trimethoprim	2	41	13					27		1	1			12								0.5	32

Table Antimicrobial susceptibility testing of S.Typhimurium in animals

n = Number of resistant isolates

S. Typhimurium

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme	no		yes									
Number of isolates available in the laboratory	23		41									
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Apramycin	20	3										
Framycetin	21	1										
Gentamicin	0	0	41	0								
Kanamycin	0	0										
Neomycin	20	5										
Streptomycin	2	0	41	17								
Amphenicols												
Chloramphenicol	0	0	41	27								
Florfenicol	23	18										
Cephalosporins												
Cefalexin	2	0										
Cefotaxim	0	0	41	0								
Ceftazidim			41	1								
Fluoroquinolones												
Ciprofloxacin	0	0	41	2								
Enrofloxacin	23	0										
Fully sensitive	23	3	6	6								
Penicillins												
Quinolones												
Nalidixic acid	0	0	41	2								
Resistant to 1 antimicrobial	23	2	5	5								
Resistant to 2 antimicrobials	23	10	1	1								
Resistant to 3 antimicrobials	23	5	1	1								
Resistant to 4 antimicrobials	23	1	1	1								
Resistant to >4 antimicrobials	23	2	27	27								
Sulfonamides												
Sulfonamide	0	0	41	31								
Tetracyclines												
Tetracyclin	23	19	41	33								
Trimethoprim			41	13								
Trimethoprim + sulfonamides												

Table Antimicrobial susceptibility testing of S. Virchow in Pigs - Monitoring (Baseline Study: Lymph Nodes) - quantitative data [Dilution method]

	S. Virchow
	Pigs - Monitoring (Baseline Study: Lymph Nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	0										1									2	128
Amphenicols																							
Chloramphenicol	16	1	0									1										2	64
Florfenicol	16	1	0									1										2	64
Cephalosporins																							
Cefotaxim	0.5	1	0			1																.06	4
Ceftazidim	2	1	0					1														.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	1									1										.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	0											1								8	1024
Tetracyclines																							
Tetracyclin	8	1	0							1												1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in S. Virchow

n = Number of resistant isolates	S. Virchow	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	0
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Penicillins		
Ampicillin	1	1
Quinolones		
Nalidixic acid	1	0
Resistant to 1 antimicrobial	1	1
Sulfonamides		
Sulfonamide	1	0
Tetracyclines		
Tetracyclin	1	0
Trimethoprim	1	0

Table Antimicrobial susceptibility testing of Salmonella spp., unspecified in Pigs - Monitoring (Baseline study: Lymph Nodes) - quantitative data [Dilution method]

	Salmonella spp., unspecified
	Pigs - Monitoring (Baseline study: Lymph Nodes)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	1

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																						
	Break point	**N**	**n**	**<=0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**512**	**1024**	**2048**	**>2048**	**lowest**	**highest**
Aminoglycosides																							
Gentamicin	2	1	0				1															.25	32
Streptomycin	32	1	1												1							2	128
Amphenicols																							
Chloramphenicol	16	1	1												1							2	64
Florfenicol	16	1	1												1							2	64
Cephalosporins																							
Cefotaxim	0.5	1	0		1																	.06	4
Ceftazidim	2	1	0				1															.25	16
Fluoroquinolones																							
Ciprofloxacin	0.06	1	0	1																		.008	8
Penicillins																							
Ampicillin	4	1	1											1								.5	32
Quinolones																							
Nalidixic acid	16	1	0								1											4	64
Sulfonamides																							
Sulfonamide	256	1	1																1			8	1024
Tetracyclines																							
Tetracyclin	8	1	1											1								1	64
Trimethoprim	2	1	0					1														.5	32

Table Antimicrobial susceptibility testing in Salmonella spp., unspecified

n = Number of resistant isolates	Salmonella spp., unspecified	
	Pigs	
Isolates out of a monitoring programme		yes
Number of isolates available in the laboratory		1
Antimicrobials:	**N**	**n**
Aminoglycosides		
Gentamicin	1	0
Streptomycin	1	1
Amphenicols		
Chloramphenicol	1	0
Cephalosporins		
Cefotaxim	1	0
Ceftazidim	1	0
Fluoroquinolones		
Ciprofloxacin	1	0
Penicillins		
Ampicillin	1	1
Quinolones		
Nalidixic acid	1	0
Resistant to >4 antimicrobials	1	1
Sulfonamides		
Sulfonamide	1	1
Tetracyclines		
Tetracyclin	1	1
Trimethoprim	1	0

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

Broth dilution

Standards used for testing

x

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				16						
Florfenicol				16						
Tetracyclines										
Tetracyclin				8						
Fluoroquinolones										
Ciprofloxacin				0.06						
Enrofloxacin										
Quinolones										
Nalidixic acid				16						
Trimethoprim				2						
Sulfonamides										
Sulfonamide				256						
Aminoglycosides										
Streptomycin				32						
Gentamicin				2						
Neomycin										
Kanamycin				4						
Trimethoprim + sulfonamides										
Cephalosporins										
Cefotaxim				0.5						
Ceftazidim				2						
3rd generation cephalosporins										
Penicillins										
Ampicillin				4						

2.2. CAMPYLOBACTERIOSIS

2.2.1. General evaluation of the national situation

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. upsaliensis	C. jejuni	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus)										
fresh										
- at processing plant	DAFF	single	Various	112	71					71
- at retail	OFML	single	25g	1	0					
meat products										
raw but intended to be eaten cooked										
- at retail	OFML	single	25g	9	3				3	
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	24	0					
- at retail	OFML	single	25g	399	0					
- at retail	OFML	single	25g	14	0					
Meat from turkey										
fresh										
- at processing plant	DAFF	single	Various	12	7					7
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	13	0					
- at retail	OFML	single	25g	75	0					

- at retail	OFML	single	25g	4	0					
Meat from duck										
fresh										
- at processing plant	DAFF	single	Various	10	8					8
meat products										
cooked, ready-to-eat										
- at retail	OFML	single	25g	12	0					
Meat from poultry, unspecified										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	9	0					

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

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										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	5	0					
- at retail	OFML	single	25g	165	0					
raw but intended to be eaten cooked										
- at retail	OFML	single	25g	2	0					
- at retail	OFML	single	25g	1	0					
Meat from bovine animals										
meat products										
cooked, ready-to-eat										
- at retail	OFML	single	25g	64	0					
- at retail	OFML	single	25g	1	0					
Meat from sheep										
meat products										
cooked, ready-to-eat										
- at retail	OFML	single	25g	5	0					
- at retail	OFML	single	25g	1	0					
Meat from other animal species or not specified										
meat products										
raw but intended to be eaten cooked										
- at retail	OFML	single	25g	1	0					
cooked, ready-to-eat										
- at retail	OFML	single	25g	33	0					
- at retail	OFML	single	25g	3	0					
Meat, mixed meat										

meat products											
cooked, ready-to-eat											
- at retail	OFML	single	25g	13	0						
- at retail	OFML	single	25g	4	0						
Milk from other animal species or unspecified											
raw											
- at retail	OFML	single	25g	1	0						
pasteurised											
- at retail	OFML	single	25g	1	0						
Cheeses, made from unspecified milk or other animal milk											
- at retail	OFML	single	25g	4	0						
Dairy products (excluding cheeses)											
cream											
- at retail	OFML	single	25g	3	0						
ice-cream											
- at retail	OFML	single	25g	3	0						
dairy products, not specified											
- at retail	OFML	single	25g	4	0						
Eggs											
raw material (liquid egg) for egg products											
- at retail	OFML	single	25g	1	0						
Egg products											
- at retail	OFML	single	25g	9	0						
Fishery products, unspecified											
- at retail	OFML	single	25g	41	0						
cooked											
- at retail	OFML	single	25g	19	0						
raw											
- at retail	OFML	single	25g	4	0						
Fruits and vegetables											
- at retail	OFML	single	25g	11	1	1					
Infant formula											
- at retail	OFML	single	25g	1	0						
Bakery products											
desserts											
- at retail	OFML	single	25g	2	0						
- at retail	OFML	single	25g	5	0						
Beverages, non-alcoholic											
- at retail	OFML	single	25g	4	0						
Cereals and meals											
- at retail	OFML	single	25g	4	0						

Other processed food products and prepared dishes										
unspecified										
ready-to-eat foods										
- at retail	OFML	single	25g	169	0					
non-ready-to-eat foods										
- at retail	OFML	single	25g	1	0					
- at retail	OFML	single	25g	2	0					
Sauce and dressings										
- at retail	OFML	single	25g	24	0					
Soups										
- at retail	OFML	single	25g	4	0					

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

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)									
dairy cows	Diagnostic	animal	16	5	5	0	0	0	0
calves (under 1 year)	Diagnostic	animal	1869	207	207	0	0	0	0
Sheep	Diagnostic	animal	195	15	15	0	0	0	0
Goats	Diagnostic	animal	6	1	1	0	0	0	0
Pigs	Diagnostic	animal	5	1	1	0	0	0	0
Solipeds, domestic	Diagnostic	animal	14	1	1	0	0	0	0
Gallus gallus (fowl)									
broilers									
- at farm		animal	2	0	0	0	0	0	0
- at slaughterhouse		animal	0	0	0	0	0	0	0
Turkeys	Diagnostic	animal	1	0	0	0	0	0	0
Ducks		animal	0	0	0	0	0	0	0
Geese		animal	0	0	0	0	0	0	0
Dogs	Diagnostic	animal	48	7	7	0	0	0	0
Cats	Diagnostic	animal	1	0	0	0	0	0	0
Pigeons	Diagnostic	animal	1	0	0	0	0	0	0
Badgers	Diagnostic	animal	3	1	1	0	0	0	0
Deer	Diagnostic	animal	2	0	0	0	0	0	0
Zoo animals, all	Diagnostic	animal	4	0	0	0	0	0	0

2.2.5. Antimicrobial resistance in Campylobacter isolates

2.3. LISTERIOSIS

2.3.1. General evaluation of the national situation

2.3.2. Listeriosis in humans

2.3.3. Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Cheeses made from goats' milk										
unspecified										
- at retail	OFML	single	25g	1	0	0	0	1	0	0
made from pasteurised milk										
- at retail	OFML	single	25g	1	0	1	0	1	0	0
Cheeses made from sheep's milk										
unspecified										
- at retail	OFML	single	25g	2	0	2	0	2	0	0
Dairy products (excluding cheeses)										
butter										
- at retail	OFML	single	25g	3	0	0	0	3	0	0
made from pasteurised milk										
- at processing plant	DSL	batch	Various	46	0	46	0	0	0	0
made from raw or low heat-treated milk										
- at processing plant	DSL	batch	Various	2	0	2	0	0	0	0
cream										
- at retail	OFML	single	25g	32	0	10	0	32	0	0
made from pasteurised milk										
- at retail	OFML	single	25g	28	0	14	0	28	0	0
- at processing plant	DSL	batch	Various	36	0	36	0	0	0	0

dairy desserts										
- at retail	OFML	single	25g	8	0	7	0	8	0	0
dairy products, not specified										
- at retail	OFML	single	25g	56	0	26	0	56	0	0
made from pasteurised milk										
- at processing plant	DSL	batch	Various	95	1	95	1	0	0	0
ice-cream										
- at retail (2)	OFML	single	25g	349	1	185	1	349	0	1
made from pasteurised milk										
- at processing plant	DSL	batch	Various	84	0	84	0	0	0	0
milk powder and whey powder										
- at processing plant	DSL	batch	Various	84	0	9	0	75	0	0
Milk from other animal species or unspecified										
pasteurised										
- at retail	OFML	single	25g	2	0	0	0	2	0	0
- at processing plant	DSL	batch	Various	49	2	49	2	0	0	0
- at retail	OFML	single	25g	4	0	3	0	4	0	0
Cheeses, made from unspecified milk or other animal milk										
unspecified										
made from pasteurised milk										
- at processing plant	DSL	batch	Various	175	27	175	27	0	0	0
- at retail	OFML	single	25g	6	0	5	0	6	0	0
- at retail	OFML	single	25g	151	1	108	1	151	0	0
made from raw or low heat-treated milk										
- at retail	OFML	single	25g	4	0	4	0	4	0	0
- at processing plant (1)	DSL	batch	Various	110	18	110	18	1	0	0
soft and semi-soft										
- at retail	OFML	single	25g	2	0	2	0	2	0	0
made from pasteurised milk										
- at retail	OFML	single	25g	2	0	2	0	2	0	0
- at processing plant	DSL	batch	Various	35	0	35	0	0	0	0

(1) : Note 1: One of these DSL samples that had a Listeria mono Positive result for its Qualitative test also performed a Listeria mono Quantitative test. The Quantitative test was found to be <LOD.
(2) : Note 1: Listeria mono was detected in one sample for both Qualitative & Quantitative tests. The Quantitative result is = 340 cfu/ g.

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.
DSL: Batches comprised of 1 - 10 samples with each sample of weight 25g.

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)										
fresh										
- at retail	OFML	single	25g	3	1	3	1	3	0	0
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	69	0	69	0	0	0	0
- at retail (1)	OFML	single	25g	992	10	629	10	983	0	2
raw but intended to be eaten cooked										
- at processing plant	CMCL	single	25g	3	0	3	0	0	0	0
- at retail	OFML	single	25g	128	2	50	2	124	0	0
Meat from pig										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	59	0	59	0	0	0	0
- at retail (2)	OFML	single	25g	899	18	568	17	895	2	0
raw but intended to be eaten cooked										
- at retail	OFML	single	25g	2	0	0	0	2	0	0
- at retail	OFML	single	25g	70	0	33	0	66	0	0
Meat from bovine animals										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	18	0	18	0	0	0	0
- at retail	OFML	single	25g	338	6	197	6	324	0	0
- at retail	OFML	single	25g	58	0	13	0	55	0	0
Infant formula										
- at retail	OFML	single	25g	46	0	45	0	3	0	0
dried										
- at processing plant (intended for infants above 6 months)	DSL	batch	Various	14	0	14	0	0	0	0

intended for infants below 6 months										
- at processing plant	DSL	batch	Various	24	0	24	0	0	0	0
liquid										
- at processing plant	DSL	batch	Various	5	0	5	0	0	0	0
Crustaceans										
unspecified										
- at processing plant	SFPA	single	25g	13	0	13	0	0	0	0
- at retail	OFML	single	25g	2	0	0	0	2	0	0
cooked										
- at retail	OFML	single	25g	24	1	12	1	24	0	0
Fishery products, unspecified										
- at processing plant	SFPA	single	25g	35	0	35	0	0	0	0
cooked										
- at retail	OFML	single	25g	301	5	226	5	298	0	0
raw										
- at retail	OFML	single	25g	11	0	8	0	9	0	0
- at retail (Unspecified)	OFML	single	25g	98	2	15	2	97	0	0
- at retail (Smoked) (3)	OFML	single	25g	52	4	32	3	52	0	1
Molluscan shellfish										
- at processing plant	SFPA	single	25g	2	0	2	0	0	0	0
cooked										
- at retail	OFML	single	25g	7	0	3	0	7	0	0
Meat from turkey										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	58	0	58	0	0	0	0
- at retail	OFML	single	25g	143	0	93	0	140	0	0
- at retail	OFML	single	25g	12	0	2	0	12	0	0
Meat from duck										
meat products										
cooked, ready-to-eat										
- at retail	OFML	single	25g	19	0	13	0	19	0	0
Meat from poultry, unspecified										
meat products										
raw but intended to be eaten cooked										
- at processing plant	CMCL	single	25g	1	0	1	0	0	0	0
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	50	0	50	0	0	0	0
- at retail	OFML	single	25g	1	0	1	0	1	0	0
Meat from sheep										
meat products										
cooked, ready-to-eat										
- at retail	OFML	single	25g	30	0	13	0	27	0	0
- at retail	OFML	single	25g	4	0	1	0	4	0	0

Meat from other animal species or not specified										
meat products										
raw but intended to be eaten cooked										
- at retail	OFML	single	25g	1	1	1	1	1	0	0
cooked, ready-to-eat										
- at retail	OFML	single	25g	232	4	152	4	226	0	0
- at retail	OFML	single	25g	59	0	38	0	54	0	0
Meat, mixed meat										
meat products										
cooked, ready-to-eat										
- at processing plant	CMCL	single	25g	4	0	4	0	0	0	0
- at retail	OFML	single	25g	49	1	25	1	46	0	0
- at retail	OFML	single	25g	8	0	2	0	8	0	0
Bakery products										
desserts										
- at retail	OFML	single	25g	144	0	94	0	141	0	0
- at retail	OFML	single	25g	200	0	93	0	200	0	0
Beverages, non-alcoholic										
soft drinks										
- at retail	OFML	single	25g	513	0	17	0	513	0	0
Cereals and meals										
- at retail	OFML	single	25g	189	1	99	1	187	0	0
Egg products										
- at retail	OFML	single	25g	475	11	283	11	470	0	0
Eggs										
raw material (liquid egg) for egg products										
- at retail	OFML	single	25g	3	0	2	0	2	0	0
table eggs										
- at retail	OFML	single	25g	10	0	4	0	10	0	0
Fruits and vegetables										
- at retail	OFML	single	25g	317	4	164	4	316	0	0
Juice										
fruit juice										
unpasteurised										
- at retail	OFML	single	25g	275	0	0	0	275	0	0
- at retail	OFML	single	25g	9	0	8	0	9	0	0
mixed juice										
- at retail	OFML	single	25g	21	0	0	0	21	0	0
vegetable juice										
- at retail	OFML	single	25g	29	0	0	0	29	0	0
- at retail (unspecified)	OFML	single	25g	12	0	0	0	12	0	0
Mushrooms										
- at retail	OFML	single	25g	1	0	0	0	1	0	0

Other food										
- at retail	OFML	single	25g	33	0	9	0	33	0	0
Other processed food products and prepared dishes										
unspecified										
- at retail	OFML	single	25g	29	0	5	0	29	0	0
non-ready-to-eat foods										
- at retail	OFML	single	25g	3	0	3	0	3	0	0
ready-to-eat foods										
- at retail (4)	OFML	single	25g	2569	32	1419	32	2567	1	2
Sauce and dressings										
- at retail	OFML	single	25g	266	0	141	0	265	0	0
Seeds, sprouted										
ready-to-eat										
- at retail	OFML	single	25g	4	0	4	0	4	0	0
Soups										
- at retail	OFML	single	25g	95	0	52	0	95	0	0
Spices and herbs										
- at retail	OFML	single	25g	8	0	0	0	8	0	0

(1) : Note 1: Listeria mono was detected in two samples for both Qualitative & Quantitative tests. The Quantitative results were = 350 cfu/ g & 480 cfu/ g.
Note 2: Of the other 8 Listeria mono Qualitative tests that had a Positive result; 7 of these had Quantitative results of <20 cfu/ g and 1 had no Quantitative result performed.
(2) : Note 1: Listeria mono was detected in two samples during Quantitative testing. In the first of these samples no Qualitative test was performed. The Quantitative result of this sample was = 5 cfu/ g. In the second of these samples a Qualitative test was also performed and came back as Positive. The Quantitative result result of this sample was = 30 cfu/ g. Note 2: Of the other 16 Listeria mono Qualitative tests that had a Positive result please note that all of these had Quantitative results that were <LOD.
(3) : Note 1: Listeria mono (Quantitative) was detected in one sample. No Qualitative Listeria mono test was performed on this sample. The Quantitative result is = 150 cfu/ g. Note 2: Three Lm Qualitative results tested Positive. All three of these had a Lm Quantitative result of <LOD.
(4) : Note 1: Lm was detected in three samples for both the Qualitative & Quantitative tests. The Lm Quantitative results were = 50 cfu/ g, 300 cfu/ g & 600 cfu/ g. Note 2: Of the other 29 Lm Qualitative tests that had a Positive result please note that all of these had Lm Quantitative results that were <LOD.

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.
DSL: Batches comprised of 1 - 10 samples with each sample of weight 25g.

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)						
dairy cows	Diagnostic	animal	590	1	1	0
Sheep	Diagnostic	animal	1133	11	6	5
Goats	Diagnostic	animal	49	0	0	0
Pigs	Diagnostic	animal	418	0	0	0
Gallus gallus (fowl)	Diagnostic	animal	160	0	0	0
Turkeys	Diagnostic	animal	67	0	0	0

2.4. E. COLI INFECTIONS

2.4.1. General evaluation of the national situation

2.4.2. E. Coli Infections in humans

2.4.3. Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from broilers (Gallus gallus)								
fresh								
- at retail	OFML	single	25g	1	0			
meat products								
cooked, ready-to-eat								
- at retail	OFML	single	25g	9	0			
- at retail	OFML	single	25g	1	0			
raw but intended to be eaten cooked								
- at retail	OFML	single	25g	1	0			
Meat from pig								
meat products								
cooked, ready-to-eat								
- at retail	OFML	single	25g	14	0			
Meat from bovine animals								
fresh								
- at retail	OFML	single	25g	8	0			
minced meat								
intended to be eaten cooked								
- at retail	OFML	single	25g	38	0			

meat products								
cooked, ready-to-eat								
- at retail	OFML	single	25g	3	0			
- at retail	OFML	single	25g	4	0			
raw but intended to be eaten cooked								
- at retail	OFML	single	25g	4	0			
Meat from other animal species or not specified								
meat products								
cooked, ready-to-eat								
- at retail	OFML	single	25g	6	0			
raw but intended to be eaten cooked								
- at retail	OFML	single	25g	5	0			
Fruits and vegetables								
- at retail	OFML	single	25g	3	0			
Juice								
fruit juice								
unpasteurised								
- at retail	OFML	single	25g	139	0			
mixed juice								
- at retail	OFML	single	25g	10	0			
vegetable juice								
- at retail	OFML	single	25g	16	0			
- at retail	OFML	single	25g	7	0			
Fishery products, unspecified								
cooked								
- at retail	OFML	single	25g	1	0			
raw								
- at retail	OFML	single	25g	1	0			
Egg products								
- at retail	OFML	single	25g	3	0			
Dairy products (excluding cheeses)								
cream								
- at retail	OFML	single	25g	1	0			
ice-cream								
- at retail	OFML	single	25g	5	0			
- at retail	OFML	single	25g	3	0			
Cheeses, made from unspecified milk or other animal milk								
- at retail	OFML	single	25g	4	0			
Beverages, non-alcoholic								
- at retail	OFML	single	25g	275	0			
Other food								

- at retail	OFML	single	25g	1	0			
Other processed food products and prepared dishes								
unspecified								
ready-to-eat foods								
- at retail	OFML	single	25g	3	0			
Sauce and dressings								
- at retail	OFML	single	25g	7	0			

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

2.4.4. Escherichia coli, pathogenic in animals

2.5. TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1. General evaluation of the national situation

2.5.2. Tuberculosis, Mycobacterial Diseases in humans

2.5.3. Mycobacterium in animals

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
Sheep	Laboratory	animal	50	12	12		
Goats	Diagnostic	animal	3	0			
Badgers	Diagnostic	animal	898	249	242	1	6
Deer	Laboratory	animal	192	46	38	1	7
Foxes	Diagnostic	animal	1	0			
Cats	Diagnostic	animal	1	0			

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/ 432/ EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
IRELAND	120652	6084037	116282	96.378	5278	4.375	1	6009402	236430	6234	3343
Total	120652	6084037	116282	96.378	5278	4.375		6009402	236430	6234	3343

Footnote

Many animals are tested as part of a whole herd test prior to movement into other herds. This number is not quantifiable. 236,430 animals were tested specifically (i.e. not whole herd test) prior to movement.

(*) 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

2.6.2. Brucellosis in humans

2.6.3. Brucella in foodstuffs

2.6.4. Brucella in animals

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	Diagnostic	animal	5	0	0	0	0	0
Solipeds, domestic								
horses	Diagnostic	animal	8	0	0	0	0	0
Cattle (bovine animals)	Diagnostic	animal	1687	0	0	0	0	0
Sheep and goats								
(Ovine)	Diagnostic	animal	1	0	0	0	0	0
(Caprine)	Diagnostic	animal	2	0	0	0	0	0
Dogs	Diagnostic	animal	1	0	0	0	0	0
Zoo animals, all								
(Exotic)	Diagnostic	animal	8	0	0	0	0	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
IRELAND	120652	120652	116952	161	161	0	0	96.933	0.138	0.138
Total	120652	120652	116952	161	161	0	0	96.933	0.138	0.138
Total - 1	122523	122523	118924	132	132	3	2.273	97.063	0.111	0.111

Footnote

*While 161 herds had a positive serological result in 2007, no herd had confirmed brucellosis infection. Based on detailed epidemiological and other investigations all serological positives were cross reactions/ false positives.
**While 132 herds had a positive serological result in 2006, only 1 herd had confirmed brucellosis infection. All others were cross reactions/ false positives.

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
IRELAND	6084037	3324511	3324511	3324511	192	192	192	100	0.006
Total	6084037	3324511	3324511	3324511	192	192	192	100	0.006
Total - 1	6260133	3592894	3592894	3592894	212	212	388	100	0.006

Footnote

Note: Based on detailed epidemiology and other investigations, all 192 serologically positive animals in 2007 were false positive/ cross reactions.

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
IRELAND	120652	3324511	0	0	24	2500	8	650	0	0	0	0	120620	6080887
Total	120652	3324511	0	0	24	2500	8	650	0	0	0	0	120620	6080887
Total - 1	122523	6260133	0	0	18	1900	7	750	0	0	0	0	122498	6257483

Footnote

All herds 'not free or officially not free' at year end were as a result of false positive reactions/ cross reactions

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
IRELAND	35000	3600000	35000	100	0	0	1300	25000	0	0	0	0	0	0
Total	35000	3600000	35000	100	0	0	1300	25000	0	0	0	0	0	0

Footnote

Ireland is recognised as Officially Free of B. Meletensis (Commission Decision 93/ 52), and carries out an annual survey to confirm this freedom

2.7. YERSINIOSIS

2.7.1. General evaluation of the national situation

2.7.2. Yersiniosis in humans

2.7.3. Yersinia in foodstuffs

2.7.4. Yersinia in animals

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia spp.	Y. enterocolitica	Yersinia spp., unspecified	Y. pseudotuberculosis	Y. enterocolitica - O:9	Y. enterocolitica - O:3	Y. enterocolitica - unspecified
Cattle (bovine animals)	Diagnostic	animal	7723	0	0	0		0	0	0
Sheep	Diagnostic	animal	1133	0	0	0		0	0	0
Goats	Diagnostic	animal	49	1	0	1		0	0	0
Pigs	Diagnostic	animal	418	0	0	0		0	0	0
Solipeds, domestic	Diagnostic	animal	1304	1	0	0	1	0	0	0
Poultry, unspecified	Diagnostic	animal	160	0	0	0	0	0	0	0
Dogs	Diagnostic	animal	579	1	0	1	0	0	0	0
Cats		animal	0	0	0	0	0	0	0	0

2.8. TRICHINELLOSIS

2.8.1. General evaluation of the national situation

2.8.2. Trichinellosis in humans

2.8.3. Trichinella in animals

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified
Pigs	CMCL	animal	3375	0		
breeding animals						
unspecified						
sows and boars	CMCL	animal	800	0		
- at slaughterhouse	Industry	animal	2522308	0		
Solipeds, domestic						
horses	CMCL	animal	61	0		
- at slaughterhouse	Industry	animal	1400	0		

Footnote

Industry - All pigs and horses slaughtered in Ireland are privately tested for trichinella at CMCL approved laboratories.
CMCL - In addition the Central Meat Control Laboratory (CMCL), the national reference laboratory, annually tests a number of official samples.

2.9. ECHINOCOCCOSIS

2.9.1. General evaluation of the national situation

2.9.2. Echinococcosis in humans

2.9.3. Echinococcus in animals

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

2.10.2. Toxoplasmosis in humans

2.10.3. Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cattle (bovine animals)	Diagnostic	animal	19	3	3
Sheep	Diagnostic	animal	440	72	72
Goats	Diagnostic	animal	4	0	0
Pigs		animal	0	0	0
Solipeds, domestic	Diagnostic	animal	1	0	0
Dogs	Diagnostic	animal	3	0	0
Cats	Diagnostic	animal	2	0	0
All animals					
zoo animals	Diagnostic	animal	9	3	3

Footnote

Latex Agglutination Test (positive titre >= 1/ 1024)

2.11. RABIES

2.11.1. General evaluation of the national situation

2.11.2. Lyssavirus (rabies) in animals

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)		animal	0	0	0	0	0
Sheep		animal	0	0	0	0	0
Goats		animal	0	0	0	0	0
Pigs		animal	0	0	0	0	0
Solipeds, domestic		animal	0	0	0	0	0
Dogs		animal	0	0	0	0	0
stray dogs		animal	0	0	0	0	0
Cats		animal	0	0	0	0	0
stray cats		animal	0	0	0	0	0
Bats							
wild		animal	0	0	0	0	0
Foxes							
wild		animal	0	0	0	0	0
Raccoon dogs							
wild		animal	0	0	0	0	0
Raccoons							
wild		animal	0	0	0	0	0
Wolves							
wild		animal	0	0	0	0	0
Badgers							
wild		animal	0	0	0	0	0
Marten							
wild		animal	0	0	0	0	0
Wild boars							

wild		animal	0	0	0	0	0
Deer		animal	0	0	0	0	0
wild							
roe deer		animal	0	0	0	0	0
red deer		animal	0	0	0	0	0
fallow deer		animal	0	0	0	0	0

2.12. Q-FEVER

2.12.1. General evaluation of the national situation

2.12.2. Coxiella (Q-fever) in animals

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ENTEROCOCCUS, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

3.1.2. Antimicrobial resistance in Enterococcus, non-pathogenic isolates

Table Antimicrobial susceptibility testing in E. faecium

n = Number of resistant isolates	E. faecium			
	Cattle (bovine animals)		**Dogs**	
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	16		2	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Apramycin	3	1	0	0
Framycetin	13	5	0	0
Neomycin	13	9	0	0
Streptomycin	3	3	2	1
Amphenicols				
Chloramphenicol	0	0	0	0
Florfenicol	6	0	2	0
Cephalosporins				
Cefalexin	12	8	2	1
Cefotaxim	0	0	0	0
Fluoroquinolones				
Ciprofloxacin	0	0	0	0
Enrofloxacin	5	3	2	1
Fully sensitive	16	1	2	1
Penicillins				
Amoxicillin / Clavulanic acid	16	1	2	0
Penicillin	12	6	2	1
Quinolones				
Nalidixic acid	0	0	0	0
Resistant to 1 antimicrobial	16	2	2	0
Resistant to 2 antimicrobials	16	2	2	0
Resistant to 3 antimicrobials	16	2	2	0
Resistant to 4 antimicrobials	16	4	2	0
Resistant to >4 antimicrobials	16	5	2	1
Tetracyclines				
Tetracyclin	15	9	2	0
Trimethoprim + sulfonamides				
Trimethoprim + Sulfamethoxazol	6	5	2	1

Table Antimicrobial susceptibility testing in E. faecalis

n = Number of resistant isolates	E. faecalis			
	Cattle (bovine animals)		**Dogs**	
Isolates out of a monitoring programme	no		no	
Number of isolates available in the laboratory	75		10	
Antimicrobials:	**N**	**n**	**N**	**n**
Aminoglycosides				
Apramycin	3		3	3
Framycetin	73		3	1
Neomycin	72		3	3
Streptomycin	2		7	7
Amphenicols				
Chloramphenicol	0		0	0
Florfenicol	5		10	1
Cephalosporins				
Fluoroquinolones				
Ciprofloxacin	0		0	0
Enrofloxacin	5		10	4
Fully sensitive	75		10	0
Penicillins				
Amoxicillin / Clavulanic acid	75		10	0
Penicillin	72		7	1
Quinolones				
Nalidixic acid	0		0	0
Resistant to 1 antimicrobial	75		10	0
Resistant to 2 antimicrobials	75		10	0
Resistant to 3 antimicrobials	75		10	3
Resistant to 4 antimicrobials	75		10	5
Resistant to >4 antimicrobials	75		10	2
Tetracyclines				
Tetracyclin	75		10	5
Trimethoprim + sulfonamides				
Trimethoprim + Sulfamethoxazol	5		10	8

Table Breakpoints for antibiotic resistance of Enterococcus, non-pathogenic in Animals

Test Method Used

Standards used for testing

Enterococcus, 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 <=
Tetracyclines							10	19		14
Amphenicols										
Florfenicol							30	19		14
Fluoroquinolones										
Enrofloxacin							5	23		16
Aminoglycosides										
Neomycin							10	17		12
Apramycin							15	21		14
Framycetin							100	17		12
Penicillins										
Amoxicillin / Clavulanic acid							30	18		13
Trimethoprim + sulfonamides										
Trimethoprim + Sulfamethoxazol							25	16		10

3.2. ESCHERICHIA COLI, NON-PATHOGENIC

3.2.1. General evaluation of the national situation

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

Table Antimicrobial susceptibility testing of E. coli in animals

n = Number of resistant isolates	E. coli											
	Sheep		**Cattle (bovine animals)**		**Pigs**		**Gallus gallus (fowl)**		**Dogs**		**Turkeys**	
Isolates out of a monitoring programme	no		no		no		no		no			
Number of isolates available in the laboratory	131		3178		71		39		116			
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Apramycin	101	16	2425		51	32	26	2	86	11		
Framycetin	111	6	3016	364	55	3	22	1	88	1		
Gentamicin	0	0	0	0	0	0	0	0	0	0		
Neomycin	102	39	2986	1933	52	27	22	16	86	34		
Streptomycin	16	9	86	69	13	9	12	4	22	8		
Amphenicols												
Chloramphenicol	0	0	0	0	0	0	0	0	0	0		
Florfenicol	130	22	2705	1069	71	17	35	4	116	21		
Cephalosporins												
Cefalexin	18	9	534	221	14	5	12	4	24	9		
Cefotaxim	0	0	0		0	0	0	0	0	0		
Fluoroquinolones												
Ciprofloxacin	0	0	0	0	0	0	0	0	0	0		
Enrofloxacin	131	13	2712	816	71	17	39	7	116	20		
Fully sensitive	131	33	3178	313	71	1	39	2	116	34		
Penicillins												
Amoxicillin / Clavulanic acid	128	22	3165		70	21	24	11	113	24		
Penicillin	20	20	568		14	13	12	12	25	23		
Quinolones												
Nalidixic acid	0	0	0	0	0	0	0	0	0	0		
Resistant to 1 antimicrobial	131	33	3178	431	71	4	39	6	116	17		
Resistant to 2 antimicrobials	131	22	3178	456	71	13	39	8	116	18		
Resistant to 3 antimicrobials	131	15	3178	469	71	14	39	11	116	19		
Resistant to 4 antimicrobials	131	8	3178	445	71	15	39	6	116	8		
Resistant to >4 antimicrobials	131	20	3178	1064	71	24	39	6	116	20		
Sulfonamides												
Sulfonamide	0	0	0	0	0	0	0	0	0	0		
Tetracyclines												
Tetracyclin	131	81	3178	2369	70	62	39	30	116	60		
Trimethoprim	0	0	0	0	0	0	0	0	0	0		
Trimethoprim + sulfonamides												

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1. HISTAMINE

4.1.1. General evaluation of the national situation

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
Fishery products, unspecified									
- at processing plant	SFPA	single	25g	10	0	10			

Footnote

The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

Table Enterobacter sakazakii in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Enterobacter sakazakii	E. sakazakii
Infant formula						
dried						
intended for infants below 6 months						
- at processing plant	DSL	batch	various*	4	0	
- at retail	OFML	single	25g	30	0	

Footnote

* DSL batches comprised of 1-30 samples - each sample of weight 25g. The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

4.3. STAPHYLOCOCCAL ENTEROTOXINS

4.3.1. General evaluation of the national situation

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
Egg products					
- at retail	OFML	single	25g	1	0
Cheeses, made from unspecified milk or other animal milk					
unspecified					
made from raw or low heat-treated milk					
- at processing plant	DSL	batch	Various*	20	0

Footnote

* DSL batches comprised of 5 or 10 samples - each sample of weight 25g. The sampling programme for all samples was Surveillance except where source of information is "DAFF" and sampling unit is "batch". For these samples the sampling programme is Monitoring.

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.

Foodborne Outbreaks: summarized data

	Total number of outbreaks	Number of possible outbreaks	Number of verified outbreaks
Bacillus	0	0	0
Campylobacter	2	2	0
Clostridium	0	0	0
Escherichia coli, pathogenic	3	2	1
Foodborne viruses	0	0	0
Listeria	0	0	0
Other agents	0	0	0
Parasites	4	2	2
Salmonella	5	4	1
Staphylococcus	0	0	0
Unknown	6	5	1
Yersinia	0	0	0

Verified Foodborne Outbreaks: detailed data

VTEC O157

	Value
Code	MWHB-2-5-2007
Subagent Choice	
Outbreak type	General
Human cases	6
Hospitalized	2
Deaths	0
Foodstuff implicated	Tap water, including well water
More Foodstuff	well water
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Water source
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Cryptosporidium

	Value
Code	1/3/07
Subagent Choice	
Outbreak type	General
Human cases	186
Hospitalized	unknown
Deaths	unknown
Foodstuff implicated	Tap water, including well water
More Foodstuff	
Type of evidence	Laboratory detection in implicated food, Laboratory detection in human cases
Setting	Household
Place of origin of problem	Water treatment plant
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3187

T. spiralis

	Value
Code	E2007JUN04
Subagent Choice	
Outbreak type	Household
Human cases	2
Hospitalized	1
Deaths	0
Foodstuff implicated	Pig meat and products thereof
More Foodstuff	
Type of evidence	Laboratory detection in human cases
Setting	Household
Place of origin of problem	Travel abroad
Origin of foodstuff	Not relevant
Contributory factors	
Outbreaks	1
Comment	part of outbreak in Poland -Irish cases had travelled to Poland. http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3238

4

	Value
Code	SHB-KY-2007-07-01
Subagent Choice	Salmonella; S. Enteritidis; 4
Outbreak type	General
Human cases	52
Hospitalized	16
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	
Type of evidence	Laboratory detection in human cases, Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Processing plant
Origin of foodstuff	Domestic
Contributory factors	
Outbreaks	1
Comment	

Unknown

	Value
Code	SHB-2007-03-02
Subagent Choice	
Outbreak type	General
Human cases	13
Hospitalized	0
Deaths	0
Foodstuff implicated	Bakery products
More Foodstuff	
Type of evidence	Analytical epidemiological evidence
Setting	Household
Place of origin of problem	Unknown
Origin of foodstuff	Domestic
Contributory factors	Unknown
Outbreaks	1
Comment	