

HUNGARY

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

TRENDS AND SOURCES OF ZOONOSSES AND ZOOTIC AGENTS IN HUMANS, FOODSTUFFS, ANIMALS AND FEEDSTUFFS

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

IN 2010

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Hungary

Reporting Year:

Laboratory name	Description	Contribution
Central Agricultural Office		Responsible authority for zoonoses data collection and reporting

PREFACE

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

The report contains information on trends and sources of zoonoses and zoonotic agents in Hungary during the year 2010 .

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

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

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

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

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

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1. ANIMAL POPULATIONS

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

A. Information on susceptible animal population

Sources of information

Data on susceptible animal populations were taken from official publications of the Hungarian Central Statistical Office unless it is noted that from the Central Agricultural Office who collected data from the registrations of the Directorate of Food Chain Safety and Animal Health of the Agricultural Offices of the 19 counties of Hungary.

Dates the figures relate to and the content of the figures

Most of the population data refer to the actual population as of the 1st of December 2009.

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

According to the data of the Hungarian Central Statistical Office, the decreasing tendency in most of the animal populations continued.

Additional information

The number of cows in first calf which were intended to refill the cow population has not been changed since December 2008.

The size of the pig population decreased, what is true for almost every aspects (ie. age, sex and the utilization of the pigs) except the number of young sows.

On 1 December 2009 61000 horses were counted in Hungary, 3000 horses more than in previous year.

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
		Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	- in total	17620	2010			760081	2010		
Ducks	- in total					5813000			
Gallus gallus (fowl)	breeding flocks, unspecified - in total	1187	2010			7679895	2010		
	broilers	7936				128839070			
	laying hens	1256				10656597			
Geese	- in total					1384000			
Goats	- in total					16840			
Pigs	- in total	42514	2010			2455172	2010		
Sheep	- in total					988243			
Turkeys	breeding flocks, unspecified - in total	118				348207			
	meat production flocks	2997				14327668			

2. INFORMATION ON SPECIFIC ZOO NOSES AND ZOONOTIC AGENTS

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

2.1 SALMONELLOSIS

2.1.1 General evaluation of the national situation

A. General evaluation

History of the disease and/or infection in the country

In 1992 the Veterinary Science Committee of the Hungarian Academy of Sciences has established its Salmonella Subcommittee with the main aim to support the work of the Hungarian Ministry of Agriculture and Rural Development in the control of Salmonella with regards to poultry flocks.

This subcommittee has formed a working group with EU experts to prepare the Integrated Quality Chain System for Salmonella Control in the Hungarian Poultry Sector (Edel-Wray-Nagy et al, 1995).

This has been issued by the Ministry for use in the poultry sector and distributed to the County Animal Health and Food Control Stations in 1995. In further years the Salmonella Subcommittee has arranged several courses and lectures to distribute the booklet for wider use. The Basic Document of this Guideline contained the adaptation of Council directive 92/117/EEC. The Guidelines contained general and specific instructions for hatcheries, breeding flocks, broilers, layers, egg packaging plants, slaughterhouses and feedmills. A special chapter was devoted to disinfection and cleaning.

Based on the above Guidelines several large Hungarian poultry farming systems (Babolna, Boly, Nadudvar) have built up and started their Salmonella Reduction Programs between 1996 and 2002. Besides, the Salmonella subcommittee has agreed with the Ministry of Agriculture and Rural Development to review the situation and to propose a Hungarian Salmonella Reduction Plan for Hungary, which was published by Nagy et al. in 1997.

Directive 92/117/EEC and the basics of the above mentioned Guidelines served the basis for the first ministerial decree [49/2002. (V.24) FVM] on the control of salmonellosis in poultry flocks, which referred to Salmonella Enteritidis and S. Typhimurium in Gallus gallus. The amendment to this Directive [97/2003. (VIII.19) FVM] made the application of the Order compulsory for breeding flocks and hatcheries, and continued to define the above 2 Salmonella serovars to be regarded as Salmonella for the purposes of that decree. The amendment also made the vaccination of table egg producing laying flocks compulsory. After the accession the EC regulations became directly applicable in Hungary as well. From that time EC regulations are followed. The implementation of these regulations is regulated by Decree 180/2009. (XII.29.) of Ministry of Agriculture.

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

In 2009, a significant decrease could be seen as in the prevalence of salmonella in all types of flocks under scope of national control plans as in meat, meat products, table eggs and egg products of Gallus gallus.

Recent actions taken to control the zoonoses

In 2009 control of Salmonella was compulsory in breeding, layer and broiler flocks of Gallus gallus,. Breeding flocks are vaccinated Layer flocks are vaccinated on a compulsory basis and voluntary in turkey flocks.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection amid the three levels (municipal, county and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the salmonella infection is laboratory confirmed.

Probable case: a clinically compatible case that is not confirmed by laboratory investigation, but it has an epidemiological link to a confirmed salmonellosis outbreak.

Diagnostic/analytical methods used

Salmonella isolates are obtained by culturing the faeces samples of the patients on selective-differentiating media, followed by biochemical testing and serotyping. Since 2003 the Hungarian and the Colindale sets of phages have been parallel used for phage typing of the human *S. Enteritidis* isolates received by the Phage-typing and Molecular Epidemiology Department of the 'Johan Bela' National Centre for Epidemiology. For *S. Typhimurium* isolates the schemes of Felix and Callow as well as Anderson et al. are also in use.

Notification system in place

Human cases have been notifiable since 1959. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS. Hungary has also a laboratory based surveillance system, and the NPHMOS has representative dataset from most of the microbiological laboratories about the laboratory investigated cases (since 2003 antibiotic resistances have also been reported from 5 regional laboratory of NPHMOS and from a number of laboratories from universities or hospitals).

The illness is reported first as enteritis infectiosa syndrome on the basis of the symptoms. Having the results of the laboratory tests this syndrome-based diagnose is modified to etiology-based diagnose. In some cases reporting follows only the available laboratory test results.

History of the disease and/or infection in the country

Human cases have been notifiable since 1959. The isolated strains have been phage-typed since the 1960s. The number of the recorded cases has continuously increased from 1959 to 1996 (with a maximum of 28 046 reported case/year, incidence: 274,6/100 000 inhabitant/year). The number of the recorded outbreaks has also increased in a similar way (outbreak = two epidemiologically linked cases of salmonellosis, maximum number of reported outbreaks: 3450 outbreaks in 1995). Since 1996 both the number of the recorded cases and the outbreaks has continuously decreased. The mortality has

increased only in the period of 1972-1994 (10-20 death/year, case fatality rate: 0.1-0.4%). In the other years the mortality was 5-10 death cases per year (case fatality rate: 0.03-0.09%). The age-specific incidence was the highest for the infants in all periods, and it declined with the progressing of the age. The investigation of the outbreaks mostly demonstrated a food-borne origin. The ratio of the person-to-person transmission is insignificant. In the history of human salmonellosis in Hungary there were less than 10 outbreaks caused by contaminated water.

Up to 1980 the serotype *S. Typhimurium* predominated, and pork was identified as the main source of infection. At that time the infection has spread by homemade foods and also by the products of food-industry. Since 1980 the serotype *S. Enteritidis* has become predominant and poultry has been identified as the main source of the infection. Since then the prevalence of this serotype has remained about 70-80%. Between 1975 and 1980 the *S. Enteritidis* phage type 7 (according to the Hungarian scheme) has predominated. In the period of 1980-1990 strains characterized with phage type 1, from 1990 to 1996 strains characterized with phage type 1, 6 and 6b (according to the Hungarian scheme) were most frequently identified. After 1997 the phage type 6 (acc. to the Hungarian scheme) has become the most frequently occurring phage type.

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

The epidemiological situation of the salmonellosis in Hungary has continuously improved till 2004. The number of cases has decreased from 11 507 to 7557 since 2000 (incidence ranged between 114,3 – 74,7/100 000 inhabitants/year), the case fatality ratio changed between 0,01 – 0,08%. The decrease in the number of salmonellosis cases was mainly due to the decrease in the number of cases caused by *S. Enteritidis*. Eighty percent of the cases were sporadic. There were 6 – 700 community/institutional and family acquired outbreaks recorded. The number of the outbreaks declined more significantly than that of the sporadic cases. The investigation of the outbreaks has showed that in most cases the source of the infection was poultry. Mainly poultry eggs, and foods that contained eggs used without adequate heat-treatment and that were prepared at private home or at canteen/catering trade caused outbreaks. There were only very few outbreaks caused by foods of industrial origin in the past ten years and there were no outbreaks caused by contaminated water.

Relevance as zoonotic disease

In the outbreaks a person-to-person transmission has been detected only in very few cases (in specific communities). In most case the outbreaks were suspectedly or conformedly caused by strains originated from poultry, via contaminated food.

Additional information

At the Phage-typing and Molecular Epidemiology Department of the 'Johan Bela' National Center for Epidemiology, the phage typing reactions for *S. Enteritidis* and *S. Typhimurium* are prepared parallel both with a Hungarian and the international (Ward et al., Colindale) and the Felix-Callow as well as Anderson et al. sets of phages, respectively.

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling strategy in the slaughterhouses is based on the previous years' data on production volume. The monitoring plan prepared by the CAO Food and Feed Safety Directorate determines the number of samples/county/month. The monitoring samples are thrown by the regional veterinary authority and are examined in the official control laboratories belonging to the Central Agricultural Office (CAO). It is a permanent monitoring scheme, data are reported by the official laboratories to CAO and the Ministry of Agriculture and Regional Development in the frame of an annual laboratory report. All the Salmonella strains isolated are serotyped by the NRL Salmonella.

At meat processing plant

The sampling strategy in processing plants is randomised based on the previous years' data on production volume. The samples are thrown by the veterinary authority and are examined in the official food control laboratory. It is a permanent monitoring scheme, data are reported by the official laboratories to the Ministry of Agriculture and Regional Development in the frame of an annual laboratory report.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

Fresh meat

At meat processing plant

Surface of carcass

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: NMKL No 71:1999

B. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

Food business operators perform continuous sampling system determined in their HACCP plans, and nearby there is an official control system of the competent authorities with a randomised sampling as well. The data of self control processes are checked in the frame of official control of course, but are not collected to a database, therefore these are not involved in this report. The test results of samples examined by competent authorities in their own laboratories are reported, but the data collection system do not allow to report the data separately for the different stages of food chain (slaughterhouses, processing plants, retail). Based on the structure of the EU zoonosis report, the data collection system will be restructured this year. This year all the data on fresh meat are reported in the table of slaughterhouses.

At meat processing plant

The sampling strategy is randomised and continuous, performed by the competent authorities. Food producers operate their own continuous sampling system determined in their HACCP plans as well, with the same remarks as in the case of slaughterhouses.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

Fresh meat

At meat processing plant

Surface of carcass

At retail

fresh meat and all kinds of meat products

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

500 grams of sample is sent to the laboratory, the test portion is 25 grams

At meat processing plant

Batch sampling with 5 subsamples. Test portion is 10 or 25 grams determined by 2073/2005/EC Regulation.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

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Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

C. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The sampling strategy in the slaughterhouses is based on the previous years' data on production volume. The monitoring plan prepared by the CAO Food and Feed Safety Directorate determines the number of samples/county/month. The monitoring samples are thrown by the regional veterinary authority and are examined in the official control laboratories belonging to the Central Agricultural Office (CAO). It is a permanent monitoring scheme, data are reported by the official laboratories to CAO and the Ministry of Agriculture and Rural Development in the frame of an annual laboratory report. All the Salmonella strains isolated are serotyped by the NRL Salmonella.

At meat processing plant

The sampling strategy in processing plants is randomised based on the previous years' data on production volume. The samples are thrown by the veterinary authority and are examined in the official food control laboratory. It is a permanent monitoring scheme, data are reported by the official laboratories to the Ministry of Agriculture and Rural Development in the frame of an annual laboratory report.

At retail

Retail is also sampled by the authority on a regular basis. The total number of samples is determined in the annual monitoring plan. About 60 % of the official control samples in a product group are taken at retail.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

Fresh meat

At meat processing plant

minced meat, meat prep., meat products

At retail

minced meat, meat prep., meat products

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

At least 500 grams of meat is sent to the laboratory. The test portion is 25 grams.

At meat processing plant

Batch sampling with 5 subsamples. Test portion is 5 x 10 or 25 grams according to Regulation 2073/2005/EC.

Definition of positive finding

At slaughterhouse and cutting plant

a sample or a batch is positive if salmonella was isolated

At meat processing plant

a sample or a batch is positive if salmonella was isolated

At retail

a sample or a batch is positive if salmonella was isolated

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

Preventive measures in place

According to 2073/2005/EC Reg.

Measures in case of the positive findings or single cases

According to Reg.2073/2005/EC.

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

Based on the monitoring results, salmonella prevalence is high in broiler meat in Hungary. The dominance of Salmonella Infantis strains is well-known in the past years. 90 % of the isolated strains are belonging to this serovar now.

From 1995, the rate of Salmonella Infantis/Enteritidis is showing a continuous increase for Infantis (1% to 90 %), and a decreasing trend for S. Enteritidis (from 60 % to 5%).

The marked increase of Salmonella Infantis serovar in broiler meat was not caused a significant increase in human Salmonella Infantis incidence. The dominating serovar in human infections is continuously S. Enteritidis which has been responsible for 70-80 % of the human infections for many years.

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse	CAO FFSD	Single	25 gramms (neckskin pool of 3 animals)	538	129			129	
Meat from broilers (Gallus gallus) - fresh - at processing plant	CAO FFSD	Single	25 gramms	273	56			56	
Meat from broilers (Gallus gallus) - fresh - at retail	CAO FFSD	Single	25 gramms	117	34			34	
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant	CAO FFSD	Single	25 gramms	67	9			9	
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail	CAO FFSD	Single	25 gramms	72	20			20	
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	CAO FFSD	Single	25 gramms	172	0				
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail	CAO FFSD	Single	25 gramms	94	0				
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at processing plant	CAO FFSD	Single	25 gramms	8	2			2	
Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - at retail	CAO FFSD	Single	25 gramms	4	2			2	
Meat from duck - at slaughterhouse	CAO FFSD	Single	25 gramms	215	19			19	
Meat from duck - at retail	CAO FFSD	Single	25 gramms	65	3			3	

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis
Meat from geese - at slaughterhouse	CAO FFSD	Single	25 gramms	127	5			5	
Meat from geese - at retail	CAO FFSD	Single	25 gramms	22	0				
Meat from turkey - fresh - at slaughterhouse	CAO FFSD	Single	25 gramms of neckskin pool of 3 animals	489	71			71	
Meat from turkey - fresh - at processing plant	CAO FFSD	Single	25 gramms	331	23			23	
Meat from turkey - fresh - at retail	CAO FFSD	Single	25 gramms	106	8			8	
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant	CAO FFSD	Single	25 gramms	26	0				
Meat from turkey - meat preparation - intended to be eaten cooked - at retail	CAO FFSD	Single	25 gramms	20	0				
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant	CAO FFSD	Single	25 gramms	209	0				
Meat from turkey - meat products - cooked, ready-to-eat - at retail	CAO FFSD	Single	25 gramms	68	0				
Meat from turkey - meat products - raw but intended to be eaten cooked - at retail	CAO FFSD	Single	25 gramms	1	0				
Meat from turkey - minced meat - intended to be eaten cooked - at processing plant	CAO FFSD	Single	25 gramms	48	8			8	
Meat from turkey - minced meat - intended to be eaten cooked - at retail	CAO FFSD	Single	25 gramms	102	16			16	
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - frozen - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 gramms	48	2			2	

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - frozen - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	41	2			2	
Meat from duck - meat products - cooked, ready-to-eat - unspecified - Monitoring - official sampling	CAO FFSD	Single	25 grams	8	0				
Meat from geese - meat products - cooked, ready-to-eat - unspecified - Monitoring - official sampling	CAO FFSD	Single	25 grams	18	0				
Meat from turkey - meat products - raw but intended to be eaten cooked - frozen - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	29	0				
Meat from turkey - meat products - raw but intended to be eaten cooked - frozen - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	46	3			3	
Meat from wild game - birds - fresh - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	31	0				
Meat from wild game - birds - fresh - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	21	0				

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant	CAO FFSD	Single	25 gramms	9	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail	CAO FFSD	Single	25 gramms	13	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	CAO FFSD	Single	25 gramms	3	0			
Cheeses made from goats' milk - at retail	CAO FFSD	Single	25 gramms	2	0			
Cheeses made from sheep's milk - at processing plant	CAO FFSD	Single	25 gramms	22	0			
Cheeses made from sheep's milk - at retail	CAO FFSD	Single	25 gramms	61	1			1
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	CAO FFSD	Single	25 gramms	1	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant	CAO FFSD	Single	25 gramms	164	0			
Dairy products (excluding cheeses) - ice-cream - at retail	CAO FFSD	Single	25 gramms	188	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant	CAO FFSD	Single	25 gramms	28	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at retail	CAO FFSD	Single	25 gramms	40	0			
Milk, cows' - pasteurised milk - at retail	CAO FFSD	Single	25 ml	5	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows' - raw	CAO FFSD	Single	25 ml	161	0			
Milk, cows' - raw - intended for direct human consumption	CAO FFSD	Single	25 ml	13	0			
Dairy products (excluding cheeses) - cream - made from pasteurised milk - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grammes	2	0			
Dairy products (excluding cheeses) - dairy desserts - chilled - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grammes	18	0			
Dairy products (excluding cheeses) - dairy desserts - chilled - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grammes	26	0			
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grammes	4	0			
Dairy products (excluding cheeses) - fermented dairy products - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grammes	5	0			

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Egg products - at processing plant	CAO FFSD	Single	25 grams	32	0			
Egg products - at retail	CAO FFSD	Single	25 grams	7	0			
Eggs - raw material (liquid egg) for egg products	CAO FFSD	Single	25 grams	94	2	2		
Eggs - table eggs - at packing centre	CAO FFSD	Batch	pool of 10 eggs	71	1	1		
Eggs - table eggs - at retail	CAO FFSD	Batch	pool of 10 eggs	742	3	3		
Fishery products, unspecified - at processing plant	CAO FFSD	Batch	25 grams	67	0			
Fishery products, unspecified - at retail	CAO FFSD	Batch	25 grams	205	1			1
Fruits and vegetables - precut	CAO FFSD	Single	25 grams	6	0			
Fruits and vegetables - precut - ready-to-eat	CAO FFSD	Single	25 grams	134	0			
Infant formula - dried - intended for infants below 6 months	CAO FFSD	Single	25 grams	16	0			
Molluscan shellfish - cooked - at retail	CAO FFSD	Single	25 grams	80	0			
Seeds, sprouted - non-ready-to-eat	CAO FFSD	Single	25 grams	3	0			
Seeds, sprouted - ready-to-eat	CAO FFSD	Single	25 grams	65	0			
Infant formula - dried - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	111	0			

2.1.4 Salmonella in animals

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-
Gallus gallus (fowl) - parent breeding flocks, unspecified - unspecified	1187	county report	Flock	1187	16	11			5		
	Salmonella spp., unspecified										
Gallus gallus (fowl) - parent breeding flocks, unspecified - unspecified											

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Ostriches	CAO-VDD	Animal	3	1	0	0	1
Parrots - pet animals - at farm - animal sample - Clinical investigations	CAO-VDD	Animal	6	3	0	3	0

Table Salmonella in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified
Cattle (bovine animals) - adult cattle over 2 years	CAO-VDD	Animal	401	58	0	10		48
Cattle (bovine animals) - calves (under 1 year)	CAO-VDD	Animal	47	31	3	12		16
Pigs	CAO-VDD	Animal	865	142	0	33		109
Snakes - pet animals - at farm - animal sample - Clinical investigations	CAO-VDD	Animal	2	2				2
Wild boars - from hunting - Survey - national survey	CAO-VDD	Animal	21	20	1	1		18

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Infantis
Gallus gallus (fowl) - laying hens - day-old chicks	1239	county report	Flock	174	0					
Gallus gallus (fowl) - laying hens - during rearing period	69	county report	Flock	221	2	1			1	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling	1256	county report	Flock	1256	68	19	8		41	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	1256	county report	Flock	2748						
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	1256	county report	Flock	1105						
Gallus gallus (fowl) - broilers - day-old chicks	7936	county report	Flock	1325	34				33	1
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling	7936	county report	Flock	6515	895	12	7		876	
Turkeys - breeding flocks, unspecified - adult - at farm - Control and eradication programmes - official and industry sampling	118	county report	Flock	118	0					
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	2997	county report	Flock	2997	897	1	5		891	

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-02-09	Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	S. Typhimurium	4	5
	Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	Salmonella spp., unspecified	1	891
	Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling	Total units positive for Salmonella	6	897
2011-12-19	Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry	Sampling unit	Batch	Flock
	Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling	Sampling unit	Batch	Flock

2.1.5 Salmonella in feedingstuffs

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Derby	S. Lille	S. Livingstone
Compound feedingstuffs for cattle - final product	CAO FFSD, monitoring	Batch	1 kg	49	2						
Compound feedingstuffs for pigs - final product	CAO FFSD, monitoring	Batch	1 kg	186	2				1	1	
Compound feedingstuffs for poultry (non specified) - final product	CAO FFSD, monitoring	Batch	1kg	60	0						
Compound feedingstuffs for poultry - laying hens - final product	CAO FFSD, monitoring	Batch	1 kg	43	1						
Compound feedingstuffs for poultry - breeders - final product	CAO FFSD, monitoring	Batch	1 kg	12	0						
Compound feedingstuffs for poultry - broilers - final product	CAO FFSD, monitoring	Batch	1 kg	200	0						
Pet food - dog snacks (pig ears, chewing bones)	CAO FFSD, monitoring	Batch	1kg	68	2				1		1

	S. Schwarzengrund	S. Tennessee
Compound feedingstuffs for cattle - final product		2
Compound feedingstuffs for pigs - final product		
Compound feedingstuffs for poultry (non specified) - final product		

Table Salmonella in compound feedingstuffs

	S. Schwarzengrund	S. Tennessee
Compound feedingstuffs for poultry - laying hens - final product	1	
Compound feedingstuffs for poultry - breeders - final product		
Compound feedingstuffs for poultry - broilers - final product		
Pet food - dog snacks (pig ears, chewing bones)		

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of land animal origin - meat meal	CAO FFSD, monitoring	Batch	1 kg	32	0			
Feed material of marine animal origin - fish meal	CAO FFSD, monitoring	Batch	1 kg	4	0			

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Mbandaka
Feed material of cereal grain origin - barley derived	CAO FFSD, monitoring	Batch	1 kg	5	0				
Feed material of cereal grain origin - maize	CAO FFSD, monitoring	Batch	1 kg	12	0				
Feed material of cereal grain origin - maize - derived	CAO FFSD, monitoring	Batch	1 kg	4	0				
Feed material of cereal grain origin - other cereal grain derived	CAO FFSD, monitoring	Batch	1 kg	2	0				
Feed material of cereal grain origin - wheat derived	CAO FFSD, monitoring	Batch	1 kg	17	0				
Feed material of oil seed or fruit origin - linseed derived	CAO FFSD, monitoring	Batch	1 kg	8	1				1
Feed material of oil seed or fruit origin - other oil seeds derived	CAO FFSD, monitoring	Batch	1 kg	3	0				
Feed material of oil seed or fruit origin - soya (bean) derived	CAO FFSD, monitoring	Batch	1 kg	12	0				
Feed material of oil seed or fruit origin - sunflower seed derived	CAO FFSD, monitoring	Batch	1 kg	4	0				
Other feed material - legume seeds and similar products	CAO FFSD, monitoring	Batch	1 kg	2	0				

2.1.6 Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in food

Serovar	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Meat from bovine animals - fresh - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	12		50		578		206				9		1
Number of isolates serotyped	12	0	50	0	578	0	206	0	0	0	9	0	1
Number of isolates per serovar													
S. 4,12:l,v:-							1						
S. 6,7:-:-					1		1						
S. Abony							1						

Table Salmonella serovars in food

Serovar	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Meat from bovine animals - fresh - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
	12		50		578		206				9		1
	12	0	50	0	578	0	206	0	0	0	9	0	1
Number of isolates per serovar													
S. Anatum			1				1						
S. Blockley							2						
S. Bovismorbificans	1		1		1		15				1		
S. Brandenburg			1										
S. Bredeney					3		27						
S. Choleraesuis			1										
S. Derby			7				1						
S. Dublin							1						
S. Enteritidis	1		2				2				1		

Table Salmonella serovars in food

Serovar	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Meat from bovine animals - fresh - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
	12		50		578		206				9		1
	12	0	50	0	578	0	206	0	0	0	9	0	1
Number of isolates per serovar													
S. Give			1				1						
S. Goldcoast			1										
S. Hadar							13						
S. Infantis	1		5		555		32				1		
S. Kentucky			1		2		53						
S. Kottbus							5						
S. Livingstone							2						
S. London			2										
S. Manhattan	2										1		1

Table Salmonella serovars in food

Serovar	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Meat from bovine animals - fresh - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
	12		50		578		206				9		1
	12	0	50	0	578	0	206	0	0	0	9	0	1
Number of isolates in the laboratory													
Number of isolates serotyped													
Number of isolates per serovar													
S. Mbandaka							1						
S. Montevideo			2										
S. Newport							1						
S. Ohio							2						
S. Saintpaul					3		22						
S. Schwarzengrund			1										
S. Senftenberg			1				1						
S. Tennessee							3						
S. Thompson					2		1						

Table Salmonella serovars in food

Serovar	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Meat from bovine animals - fresh - Monitoring		Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
	12		50		578		206				9		1
	12	0	50	0	578	0	206	0	0	0	9	0	1
Number of isolates in the laboratory													
Number of isolates serotyped													
Number of isolates per serovar													
S. Typhimurium	4		15		1		15				2		
S. Typhimurium, monophasic	3		7								3		
S. Virchow					1		2						
S. enterica subsp. enterica, rough			1		9								

Table Salmonella serovars in food

Serovar	Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring	Meat from bovine animals - meat products - raw but intended to be eaten cooked - Monitoring		Meat from bovine animals - minced meat - intended to be eaten cooked		Meat from broilers (Gallus gallus) - carcass - Monitoring		Meat from broilers (Gallus gallus) - fresh - Monitoring		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - Monitoring		Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		1		1		374		141		46		6	
Number of isolates serotyped	0	1	0	1	0	374	0	141	0	46	0	6	0
Number of isolates per serovar													
S. 4,12:l,v:-													
S. 6,7:-:-										1			
S. Abony													
S. Anatum													
S. Blockley													
S. Bovismorbificans						1							
S. Brandenburg													
S. Bredeney						3							
S. Choleraesuis													

Table Salmonella serovars in food

Serovar	Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring	Meat from bovine animals - meat products - raw but intended to be eaten cooked - Monitoring		Meat from bovine animals - minced meat - intended to be eaten cooked		Meat from broilers (Gallus gallus) - carcass - Monitoring		Meat from broilers (Gallus gallus) - fresh - Monitoring		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - Monitoring		Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		1		1		374		141		46		6	
Number of isolates serotyped	0	1	0	1	0	374	0	141	0	46	0	6	0
Number of isolates per serovar													
S. Derby													
S. Dublin													
S. Enteritidis													
S. Give													
S. Goldcoast													
S. Hadar													
S. Infantis						359		139		44		3	
S. Kentucky						2							
S. Kottbus													

Table Salmonella serovars in food

Serovar	Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring	Meat from bovine animals - meat products - raw but intended to be eaten cooked - Monitoring		Meat from bovine animals - minced meat - intended to be eaten cooked		Meat from broilers (Gallus gallus) - carcass - Monitoring		Meat from broilers (Gallus gallus) - fresh - Monitoring		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - Monitoring		Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		1		1		374		141		46		6	
Number of isolates serotyped	0	1	0	1	0	374	0	141	0	46	0	6	0
Number of isolates per serovar													
S. Livingstone													
S. London													
S. Manhattan													
S. Mbandaka													
S. Montevideo													
S. Newport													
S. Ohio													
S. Saintpaul						1						2	
S. Schwarzengrund													

Table Salmonella serovars in food

Serovar	Meat from bovine animals - meat preparation - intended to be eaten cooked - Monitoring	Meat from bovine animals - meat products - raw but intended to be eaten cooked - Monitoring		Meat from bovine animals - minced meat - intended to be eaten cooked		Meat from broilers (Gallus gallus) - carcass - Monitoring		Meat from broilers (Gallus gallus) - fresh - Monitoring		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - Monitoring		Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		1		1		374		141		46		6	
Number of isolates serotyped	0	1	0	1	0	374	0	141	0	46	0	6	0
Number of isolates per serovar													
S. Senftenberg													
S. Tennessee													
S. Thompson						2							
S. Typhimurium		1		1				1					
S. Typhimurium, monophasic													
S. Virchow										1			
S. enterica subsp. enterica, rough						6		1				1	

Table Salmonella serovars in food

Serovar	Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - Monitoring		Meat from duck - fresh - Monitoring		Meat from geese - fresh - Monitoring		Meat from pig - fresh - Monitoring		Meat from pig - meat preparation - intended to be eaten cooked - Monitoring		Meat from pig - meat products - raw and intended to be eaten raw - Monitoring		Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	11		21		9		16		14		15		1
Number of isolates serotyped	11	0	21	0	6	0	16	0	14	0	15	0	1
Number of isolates per serovar													
S. 4,12:l,v:-													
S. 6,7:-:-													
S. Abony					1								
S. Anatum			1								1		
S. Blockley													
S. Bovismorbificans			1								1		
S. Brandenburg											1		
S. Bredeney			1										
S. Choleraesuis							1						

Table Salmonella serovars in food

Serovar	Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - Monitoring		Meat from duck - fresh - Monitoring		Meat from geese - fresh - Monitoring		Meat from pig - fresh - Monitoring		Meat from pig - meat preparation - intended to be eaten cooked - Monitoring		Meat from pig - meat products - raw and intended to be eaten raw - Monitoring		Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	11		21		9		16		14		15		1
Number of isolates serotyped	11	0	21	0	6	0	16	0	14	0	15	0	1
Number of isolates per serovar													
S. Derby							3		2		1		
S. Dublin													
S. Enteritidis			2						1		1		
S. Give					1				1				
S. Goldcoast									1				
S. Hadar													
S. Infantis	10		2				1		2		1		1
S. Kentucky							1						
S. Kottbus			3										

Table Salmonella serovars in food

Serovar	Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - Monitoring		Meat from duck - fresh - Monitoring		Meat from geese - fresh - Monitoring		Meat from pig - fresh - Monitoring		Meat from pig - meat preparation - intended to be eaten cooked - Monitoring		Meat from pig - meat products - raw and intended to be eaten raw - Monitoring		Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	11		21		9		16		14		15		1
Number of isolates serotyped	11	0	21	0	6	0	16	0	14	0	15	0	1
Number of isolates per serovar													
S. Livingstone			1		1								
S. London							1		1				
S. Manhattan													
S. Mbandaka			1										
S. Montevideo											2		
S. Newport					1								
S. Ohio													
S. Saintpaul													
S. Schwarzengrund							1						

Table Salmonella serovars in food

Serovar	Meat from broilers (Gallus gallus) - minced meat - intended to be eaten cooked - Monitoring		Meat from duck - fresh - Monitoring		Meat from geese - fresh - Monitoring		Meat from pig - fresh - Monitoring		Meat from pig - meat preparation - intended to be eaten cooked - Monitoring		Meat from pig - meat products - raw and intended to be eaten raw - Monitoring		Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	11		21		9		16		14		15		1
Number of isolates serotyped	11	0	21	0	6	0	16	0	14	0	15	0	1
Number of isolates per serovar													
S. Senftenberg													
S. Tennessee													
S. Thompson					1								
S. Typhimurium			9		1		6		4		3		
S. Typhimurium, monophasic							2		1		4		
S. Virchow													
S. enterica subsp. enterica, rough	1								1				

Table Salmonella serovars in food

Serovar	Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring	Meat from pig - minced meat - intended to be eaten cooked - Monitoring		Meat from turkey - carcass - Monitoring		Meat from turkey - fresh - Monitoring		Meat from turkey - meat preparation - Monitoring		Meat from turkey - meat products - raw but intended to be eaten cooked - Monitoring		Meat from turkey - minced meat - intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		4		93		45		2		6		30	
Number of isolates serotyped	0	4	0	93	0	45	0	2	0	6	0	30	0
Number of isolates per serovar													
S. 4,12:l,v:-												1	
S. 6,7:-:-				1									
S. Abony													
S. Anatum													
S. Blockley				2									
S. Bovismorbificans				11		2						1	
S. Brandenburg													
S. Bredeney				11		9				1		5	
S. Choleraesuis													

Table Salmonella serovars in food

Serovar	Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring	Meat from pig - minced meat - intended to be eaten cooked - Monitoring		Meat from turkey - carcass - Monitoring		Meat from turkey - fresh - Monitoring		Meat from turkey - meat preparation - Monitoring		Meat from turkey - meat products - raw but intended to be eaten cooked - Monitoring		Meat from turkey - minced meat - intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		4		93		45		2		6		30	
Number of isolates serotyped	0	4	0	93	0	45	0	2	0	6	0	30	0
Number of isolates per serovar													
S. Derby		1				1							
S. Dublin								1					
S. Enteritidis						1							
S. Give													
S. Goldcoast													
S. Hadar				13		2							
S. Infantis				10		6		1		3		7	
S. Kentucky				30		16				1		6	
S. Kottbus												2	

Table Salmonella serovars in food

Serovar	Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring	Meat from pig - minced meat - intended to be eaten cooked - Monitoring		Meat from turkey - carcass - Monitoring		Meat from turkey - fresh - Monitoring		Meat from turkey - meat preparation - Monitoring		Meat from turkey - meat products - raw but intended to be eaten cooked - Monitoring		Meat from turkey - minced meat - intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		4		93		45		2		6		30	
Number of isolates serotyped	0	4	0	93	0	45	0	2	0	6	0	30	0
Number of isolates per serovar													
S. Livingstone													
S. London													
S. Manhattan													
S. Mbandaka													
S. Montevideo													
S. Newport													
S. Ohio				1		1							
S. Saintpaul				10		5						7	
S. Schwarzengrund													

Table Salmonella serovars in food

Serovar	Meat from pig - meat products - raw but intended to be eaten cooked - Monitoring	Meat from pig - minced meat - intended to be eaten cooked - Monitoring		Meat from turkey - carcass - Monitoring		Meat from turkey - fresh - Monitoring		Meat from turkey - meat preparation - Monitoring		Meat from turkey - meat products - raw but intended to be eaten cooked - Monitoring		Meat from turkey - minced meat - intended to be eaten cooked - Monitoring	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates													
Number of isolates in the laboratory		4		93		45		2		6		30	
Number of isolates serotyped	0	4	0	93	0	45	0	2	0	6	0	30	0
Number of isolates per serovar													
S. Senftenberg		1										1	
S. Tennessee				1		2							
S. Thompson													
S. Typhimurium		2		2									
S. Typhimurium, monophasic													
S. Virchow				1						1			
S. enterica subsp. enterica, rough													

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin		Confectionery products and pastes - Monitoring (Dry pastry)		Meat from wild boar - fresh - Monitoring
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	1		2								1		1
Number of isolates phagetyped	1	0	2	0	0	0	0	0	0	0	1	0	1
Number of isolates per phagetype													
PT 13a	1												
PT 21													
PT 6c			1										
PT 8											1		1
RDNC			1										

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from wild boar - fresh - Monitoring	Meat from wild game - birds - fresh - Monitoring	
	Surveillance	Monitoring	Surveillance
Sources of isolates			
Number of isolates in the laboratory		1	
Number of isolates phagetyped	0	1	0
Number of isolates per phagetype			
PT 13a			
PT 21		1	
PT 6c			
PT 8			
RDNC			

Table Salmonella Typhimurium phage types in food

Phagetype	Meat from bovine animals		Meat from pig		Meat from broilers (Gallus gallus)		Meat from other poultry species		Other products of animal origin	
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates										
Number of isolates in the laboratory	4		18				18			
Number of isolates phagetyped	4	0	18	0	0	0	18	0	0	0
Number of isolates per phagetype										
DT 104	1		1							
DT 104b			1							
DT 29							1			
DT 46a							2			
DT 8							3			
Not typeable	2		6				1			
RDNC	1		1				11			
U 302			7							
U 310			2							

2.1.7 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

Frequency: as described previously in prevalence tables. As only Salmonella Enteritidis and Typhimurium strains are involved in the resistance monitoring program in foodstuff, and the number of isolates belonging to these serovars is very limited because of the 90% dominance of Salmonella Infantis in broiler chicken, only a limited number of isolates are available for the tests.

Type of specimen taken

Fresh meat at slaughterhouses, minced meat, meat preparations, meat products at processing level and at the market. There is no direct sampling program for antimicrobial resistance, it is connected to prevalence monitoring.

Methods of sampling (description of sampling techniques)

As described earlier.

Procedures for the selection of isolates for antimicrobial testing

S. Enteritidis and Salmonella Infantis strains are selected. All the S. Enteritidis strains of broiler origin were tested. As S. Infantis shows a characteristic dominance in Hungary, the number of the strains available is just 2000. Therefore only 10 % of the isolates were selected for testing.

Methods used for collecting data

All the strains isolated from food are serotyped in the NRL Salmonella. Antimicrobial resistance testing is performed in the NRL.

Laboratory methodology used for identification of the microbial isolates

ISO 6579 - isolation, biochemical and serological confirmation.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Disc diffusion method according to NCCLS is used. The inhibitive zone diameters are measured by a computerised system.

Preventive measures in place

There are no specific preventive measures in place.

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

Because of the very low number of Salmonella Enteritidis isolates the information available is limited. There is no significant change in level of resistance in the past four years.

B. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Methods used for collecting data

Testing and data collection was the task of the NRL Salmonella.

Laboratory methodology used for identification of the microbial isolates

ISO 6579 - isolation, biochemical and serological confirmation. ISO 6579 - isolation, biochemical and serological confirmation.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Disc diffusion method according to NCCLS is used. The inhibitive zone diameters are measured by a computerised system.

Results of the investigation

Table Antimicrobial susceptibility testing of Salmonella in meat from bovine animals

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	2		1		2		6	
	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	2	0	1	0	2	0	6	0
Amphenicols - Florfenicol	0	0	0	0	0	0	0	0
Cephalosporins - 3rd generation cephalosporins	0	0	0	0	0	0	0	0
Fluoroquinolones - Ciprofloxacin	2	0	1	0	2	2	6	0
Fluoroquinolones - Enrofloxacin	0	0	0	0	0	0	0	0
Quinolones - Nalidixic acid	2	0	1	0	2	2	6	0
Trimethoprim	2	0	1	0	2	0	6	0
Sulphonamides - Sulfonamide	2	1	1	0	2	2	6	5
Aminoglycosides - Streptomycin	2	1	1	0	2	2	6	3
Aminoglycosides - Gentamicin	2	0	1	0	2	0	6	0
Aminoglycosides - Neomycin	2	0	1	0	2	1	6	0
Aminoglycosides - Kanamycin	2	0	1	0	2	0	6	0
Trimethoprim + Sulphonamides	0	0	0	0	0	0	0	0
Penicillins - Ampicillin	2	0	1	0	2	0	6	3
Tetracyclines - Tetracycline	2	0	1	0	2	2	6	5
Fully sensitive	2	0	1	1	2	0	6	1
Resistant to 1 antimicrobial	2	2	1	0	2	0	6	0
Resistant to 2 antimicrobials	2	0	1	0	2	0	6	2
Resistant to 3 antimicrobials	2	0	1	0	2	0	6	0

Table Antimicrobial susceptibility testing of Salmonella in meat from bovine animals

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	2		1		2		6	
	N	n	N	n	N	n	N	n
Resistant to 4 antimicrobials	2	0	1	0	2	0	6	2
Resistant to >4 antimicrobials	2	0	1	0	2	2	6	1
Cephalosporins - Cefotaxim	2	0	1	0	2	0	6	0
Cephalosporins - Cephalothin	2	0	1	0	2	0	6	0
Penicillins - Amoxicillin / Clavulanic acid	2	0	1	0	2	0	6	1

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	24		1		4		24	
	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	24	0	1	0	4	0	24	2
Amphenicols - Florfenicol	0	0	0	0	0	0	0	0
Cephalosporins - 3rd generation cephalosporins	0	0	0	0	0	0	0	0
Fluoroquinolones - Ciprofloxacin	24	4	1	1	4	2	24	2
Fluoroquinolones - Enrofloxacin	0	0	0	0	0	0	0	0
Quinolones - Nalidixic acid	24	6	1	1	4	2	24	3
Trimethoprim	24	3	1	0	4	0	24	9
Sulphonamides - Sulfonamide	24	17	1	0	4	1	24	19
Aminoglycosides - Streptomycin	24	6	1	0	4	2	24	17
Aminoglycosides - Gentamicin	24	2	1	0	4	0	24	0
Aminoglycosides - Neomycin	24	2	1	0	4	0	24	2
Aminoglycosides - Kanamycin	24	1	1	0	4	0	24	4
Trimethoprim + Sulphonamides	0	0	0	0	0	0	0	0
Penicillins - Ampicillin	24	4	1	0	4	0	24	19
Tetracyclines - Tetracycline	24	4	1	0	4	1	24	19
Fully sensitive	24	5	1	0	4	0	24	1
Resistant to 1 antimicrobial	24	9	1	0	4	2	24	2
Resistant to 2 antimicrobials	24	4	1	0	4	0	24	2
Resistant to 3 antimicrobials	24	1	1	0	4	0	24	1

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	24		1		4		24	
	N	n	N	n	N	n	N	n
Antimicrobials:								
Resistant to 4 antimicrobials	24	1	1	0	4	1	24	11
Resistant to >4 antimicrobials	24	4	1	0	4	1	24	7
Cephalosporins - Cefotaxim	24	0	1	0	4	0	24	1
Cephalosporins - Cephalothin	24	3	1	0	4	0	24	3
Penicillins - Amoxicillin / Clavulanic acid	24	4	1	0	4	0	24	5

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

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	21		2		192		2	
	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	21	1	2	0	192	1	2	0
Amphenicols - Florfenicol	0	0	0	0	0	0	0	0
Cephalosporins - 3rd generation cephalosporins	0	0	0	0	0	0	0	0
Fluoroquinolones - Ciprofloxacin	21	9	2	1	192	191	2	0
Fluoroquinolones - Enrofloxacin	0	0	0	0	0	0	0	0
Quinolones - Nalidixic acid	21	10	2	1	192	191	2	0
Trimethoprim	21	2	2	0	192	3	2	0
Sulphonamides - Sulfonamide	21	14	2	1	192	184	2	2
Aminoglycosides - Streptomycin	21	9	2	0	192	158	2	0
Aminoglycosides - Gentamicin	21	5	2	0	192	2	2	0
Aminoglycosides - Neomycin	21	2	2	0	192	6	2	0
Aminoglycosides - Kanamycin	21	6	2	0	192	11	2	0
Trimethoprim + Sulphonamides	0	0	0	0	0	0	0	0
Penicillins - Ampicillin	21	7	2	0	192	6	2	0
Tetracyclines - Tetracycline	21	8	2	0	192	163	2	0
Fully sensitive	21	4	2	1	192	0	2	0
Resistant to 1 antimicrobial	21	5	2	0	192	0	2	2
Resistant to 2 antimicrobials	21	2	2	0	192	4	2	0
Resistant to 3 antimicrobials	21	1	2	1	192	16	2	0

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

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes		yes		yes		yes	
	21		2		192		2	
	N	n	N	n	N	n	N	n
Resistant to 4 antimicrobials	21	0	2	0	192	9	2	0
Resistant to >4 antimicrobials	21	9	2	0	192	163	2	0
Cephalosporins - Cefotaxim	21	0	2	0	192	0	2	0
Cephalosporins - Cephalothin	21	6	2	0	192	18	2	0
Penicillins - Amoxicillin / Clavulanic acid	21	6	2	0	192	0	2	0

Table Antimicrobial susceptibility testing of Salmonella in meat from other poultry species

Salmonella Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
	yes							
	123		5		24		22	
	N	n	N	n	N	n	N	n
Amphenicols - Chloramphenicol	123	7	5	0	24	0	22	1
Amphenicols - Florfenicol	0	0	0	0	0	0	0	0
Cephalosporins - 3rd generation cephalosporins	0	0	0	0	0	0	0	0
Fluoroquinolones - Ciprofloxacin	123	88	5	0	24	22	22	0
Fluoroquinolones - Enrofloxacin	0	0	0	0	0	0	0	0
Quinolones - Nalidixic acid	123	93	5	0	24	22	22	4
Trimethoprim	123	17	5	0	24	0	22	0
Sulphonamides - Sulfonamide	123	91	5	3	24	22	22	9
Aminoglycosides - Streptomycin	123	58	5	0	24	15	22	1
Aminoglycosides - Gentamicin	123	33	5	0	24	0	22	0
Aminoglycosides - Neomycin	123	5	5	0	24	1	22	0
Aminoglycosides - Kanamycin	123	7	5	0	24	1	22	0
Trimethoprim + Sulphonamides	0	0	0	0	0	0	0	0
Penicillins - Ampicillin	123	75	5	0	24	1	22	2
Tetracyclines - Tetracycline	123	79	5	0	24	18	22	0
Fully sensitive	123	5	5	2	24	1	22	10
Resistant to 1 antimicrobial	123	18	5	3	24	1	22	9
Resistant to 2 antimicrobials	123	8	5	0	24	0	22	1
Resistant to 3 antimicrobials	123	13	5	0	24	3	22	1

Table Antimicrobial susceptibility testing of Salmonella in meat from other poultry species

Salmonella	Salmonella spp.		S. Enteritidis		S. Infantis		S. Typhimurium	
Isolates out of a monitoring program (yes/no)	yes							
Number of isolates available in the laboratory	123		5		24		22	
Antimicrobials:	N	n	N	n	N	n	N	n
Resistant to 4 antimicrobials	123	5	5	0	24	2	22	0
Resistant to >4 antimicrobials	123	74	5	0	24	17	22	1
Cephalosporins - Cefotaxim	123	0	5	0	24	0	22	0
Cephalosporins - Cephalothin	123	48	5	0	24	3	22	0
Penicillins - Amoxicillin / Clavulanic acid	123	48	5	0	24	0	22	2

Table Antimicrobial susceptibility testing of S. Enteritidis in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
	no																											
	1																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Florfenicol		1	0																				1					
Tetracyclines - Tetracycline		1	0															1										
Fluoroquinolones - Enrofloxacin		1	0																					1				
Quinolones - Nalidixic acid		1	0																1									
Sulphonamides - Sulfonamide		1	0							1																		
Aminoglycosides - Streptomycin		1	0													1												
Aminoglycosides - Gentamicin		1	0															1										
Penicillins - Ampicillin		1	0															1										
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																					1				
Cephalosporins - Ceftiofur		1	0																				1					

S. Enteritidis	Cattle (bovine animals) - at farm - animal sample - Clinical investigations							
	no							
	1							
	29	30	31	32	33	34	>=35	
Antimicrobials:								
Amphenicols - Florfenicol								
Tetracyclines - Tetracycline								

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	no						
	1						
Antimicrobials:	29	30	31	32	33	34	>=35
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Infantis	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory																											
	yes																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																		1							
Amphenicols - Florfenicol		1	0																	1								
Tetracyclines - Tetracycline		1	0			1																						
Fluoroquinolones - Enrofloxacin		1	0															1										
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0	1																								
Aminoglycosides - Streptomycin		1	0						1																			
Aminoglycosides - Gentamicin		1	0																1									
Cephalosporins - Cefotaxim		1	0																						1			
Cephalosporins - Ceftazidim		1	0																					1				
Cephalosporins - Ceftiofur		1	0																		1							

S. Infantis	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations							
	yes							
Antimicrobials:	29	30	31	32	33	34	>=35	
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								

Table Antimicrobial susceptibility testing of *S. Infantis* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory			Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
			no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
Amphenicols - Chloramphenicol		1	0																							1				
Amphenicols - Florfenicol		1	0																											
Tetracyclines - Tetracycline		1	0																	1										
Fluoroquinolones - Enrofloxacin		1	0																							1				
Quinolones - Nalidixic acid		1	0																	1										
Sulphonamides - Sulfonamide		1	0									1																		
Aminoglycosides - Streptomycin		1	0												1															
Aminoglycosides - Gentamicin		1	0																		1									
Penicillins - Ampicillin		1	0																				1							
Cephalosporins - Cefotaxim		1	0																											
Cephalosporins - Ceftazidim		1	0																							1				
Cephalosporins - Ceftiofur		1	0																			1								

S. Bovismorbificans	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Blockley in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Blockley	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																			1						
Tetracyclines - Tetracycline		1	0			1																						
Fluoroquinolones - Enrofloxacin		21	0																21									
Sulphonamides - Sulfonamide		1	0															1										
Aminoglycosides - Streptomycin		1	0			1																						
Aminoglycosides - Gentamicin		1	0															1										
Penicillins - Ampicillin		1	0																	1								
Cephalosporins - Cefotaxim		1	0																								1	
Cephalosporins - Ceftazidim		1	0																					1				
Cephalosporins - Ceftiofur		1	0																				1					

S. Blockley	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations							
	no							
	29	30	31	32	33	34	>=35	
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								

Table Antimicrobial susceptibility testing of *S. Blockley* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Blockley Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bredeney in Turkeys - fattening flocks - at farm - Clinical investigations - quantitative data
[Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bredeney	Turkeys - fattening flocks - at farm - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		10	0																2	1	2	1		3		1		
Amphenicols - Florfenicol		10	0															2	2	1	1	2				2		
Tetracyclines - Tetracycline		10	0	9		1																						
Fluoroquinolones - Enrofloxacin		10	0											4			1					4	1					
Quinolones - Nalidixic acid		10	0	10																								
Sulphonamides - Sulfonamide		10	0							1					2	2	1	2	1	1								
Aminoglycosides - Streptomycin		10	0								1		3	2	3	1												
Aminoglycosides - Gentamicin		10	0												1	1	1	2	2		1	1	1					
Penicillins - Ampicillin		10	0	10																								
Cephalosporins - Cefotaxim		10	0																			1	1	2	1	1		
Cephalosporins - Ceftazidim		10	0																	1	1	2	1	2		3		
Cephalosporins - Ceftiofur		10	0											1					4	2	2			1				

S. Bredeney	Turkeys - fattening flocks - at farm - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bredeney* in Turkeys - fattening flocks - at farm - Clinical investigations - quantitative data
[Diffusion method]

S. Bredeney Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2		1		1	
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling																											
		yes																											
Antimicrobials:		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol			8	0													3			1		1		2	1				
Amphenicols - Florfenicol			8	0														3			2				1	1	1		
Tetracyclines - Tetracycline			7	0	6			1																					
Fluoroquinolones - Enrofloxacin			8	0										2	1					1		2	2						
Quinolones - Nalidixic acid			8	0	7	1																							
Sulphonamides - Sulfonamide			8	0	6	1											1												
Aminoglycosides - Streptomycin			8	0				1	2	4						1													
Aminoglycosides - Gentamicin			8	0													1	1	2	1		2	1						
Penicillins - Ampicillin			8	0													2		1			3	2						
Cephalosporins - Cefotaxim			8	0																		1		2	1	1	2		
Cephalosporins - Ceftazidim			8	0																1	1		1	2	1	2			
Cephalosporins - Ceftiofur			8	0																2	2	2	2						

S. Infantis	Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1						
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp.		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
		no																											
Isolates out of a monitoring program (yes/no)																													
Number of isolates available in the laboratory																													
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		4	0																		2					1			
Amphenicols - Florfenicol		4	0																	1	1					1			
Tetracyclines - Tetracycline		3	0	2			1																						
Fluoroquinolones - Enrofloxacin		4	0															2											
Quinolones - Nalidixic acid		4	0	2															1			1							
Sulphonamides - Sulfonamide		4	0	2											1					1									
Aminoglycosides - Streptomycin		4	0					1					1		1	1													
Aminoglycosides - Gentamicin		4	0															1	1	1	1								
Penicillins - Ampicillin		4	0	2														1					1						
Cephalosporins - Cefotaxim		14	0																						1				
Cephalosporins - Ceftazidim		4	0																1		1								
Cephalosporins - Ceftiofur		4	0																1		1	1	1						

Salmonella spp.		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol			1					

Table Antimicrobial susceptibility testing of Salmonella spp. in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		2					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	11			1	1		
Cephalosporins - Ceftazidim	1	1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Kottbus in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Kottbus	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																				1					
Amphenicols - Florfenicol		1	0																				1					
Tetracyclines - Tetracycline		1	0																	1								
Fluoroquinolones - Enrofloxacin		1	0																					1				
Quinolones - Nalidixic acid		1	0																	1								
Sulphonamides - Sulfonamide		1	0														1											
Aminoglycosides - Streptomycin		1	0										1															
Aminoglycosides - Gentamicin		1	0														1											
Penicillins - Ampicillin		1	0																	1								
Cephalosporins - Cefotaxim		1	0																								1	
Cephalosporins - Ceftazidim		1	0																			1						
Cephalosporins - Ceftiofur		1	0																		1							

S. Kottbus	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Kottbus* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Kottbus Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Agona in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Agona	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		3	0																	3								
Amphenicols - Florfenicol		3	0																2	1								
Tetracyclines - Tetracycline		3	0													1	1	1										
Fluoroquinolones - Enrofloxacin		3	0																			2	1					
Quinolones - Nalidixic acid		3	0															3										
Sulphonamides - Sulfonamide		3	0	3																								
Aminoglycosides - Streptomycin		3	0								3																	
Aminoglycosides - Gentamicin		3	0										1			2												
Penicillins - Ampicillin		3	0													1	1	1										
Cephalosporins - Cefotaxim		3	0																		2		1					
Cephalosporins - Ceftazidim		3	0																3									
Cephalosporins - Ceftiofur		3	0																3									

S. Agona	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Agona* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Agona Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Anatum in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
		no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		2	0																		1		1						
Amphenicols - Florfenicol		2	0																	1				1					
Tetracyclines - Tetracycline		2	0															1		1									
Fluoroquinolones - Enrofloxacin		2	0																				1			1			
Quinolones - Nalidixic acid		2	0														1			1									
Sulphonamides - Sulfonamide		2	0	1																1									
Aminoglycosides - Streptomycin		2	0								1				1														
Aminoglycosides - Gentamicin		2	0														1			1									
Penicillins - Ampicillin		2	0														1	1											
Cephalosporins - Cefotaxim		1	0																		1								
Cephalosporins - Ceftazidim		2	0																	1			1						
Cephalosporins - Ceftiofur		2	0																1			1							

S. Anatum		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of S. Anatum in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no) yes																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																						1			
Amphenicols - Florfenicol		1	0																					1				
Tetracyclines - Tetracycline		1	0																	1								
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																1									
Sulphonamides - Sulfonamide		1	0										1															
Aminoglycosides - Streptomycin		1	0											1														
Aminoglycosides - Gentamicin		1	0																		1							
Penicillins - Ampicillin		1	0																				1					
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																							1		
Cephalosporins - Ceftiofur		1	0																						1			

S. Typhimurium	Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling						
	yes						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Hadar in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Hadar	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																						1			
Amphenicols - Florfenicol		1	0																						1			
Tetracyclines - Tetracycline		1	0			1																						
Fluoroquinolones - Enrofloxacin		1	0																				1					
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0					1																				
Aminoglycosides - Streptomycin		1	0			1																						
Aminoglycosides - Gentamicin		1	0															1										
Penicillins - Ampicillin		1	0																				1					
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																					1				

S. Hadar	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Hadar* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Hadar Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Saintpaul Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
		no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		3	0																			2		1					
Amphenicols - Florfenicol		3	0																					1		2			
Tetracyclines - Tetracycline		3	0				1											1					1						
Fluoroquinolones - Enrofloxacin		3	0																		2			1					
Quinolones - Nalidixic acid		3	0	2	1																								
Sulphonamides - Sulfonamide		3	0	2						1																			
Aminoglycosides - Streptomycin		3	0	2										1															
Aminoglycosides - Gentamicin		3	0															1	1	1									
Penicillins - Ampicillin		3	0	1														1				1							
Cephalosporins - Cefotaxim		3	0																						1				
Cephalosporins - Ceftazidim		3	0																				1	1					
Cephalosporins - Ceftiofur		3	0																	1	1				1				

S. Saintpaul		Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Saintpaul Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1		1			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Senftenberg in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Senftenberg	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations																											
	no																											
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		1	0																								1	
Amphenicols - Florfenicol		1	0																								1	
Tetracyclines - Tetracycline		2	0			1																1						
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																		1							
Sulphonamides - Sulfonamide		1	0		1																							
Aminoglycosides - Streptomycin		1	0										1															
Aminoglycosides - Gentamicin		1	0																	1								
Penicillins - Ampicillin		1	0																					1				
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																				1					

S. Senftenberg	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Turkeys - fattening flocks - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Senftenberg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - fattening flocks - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin						1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bredeney in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bredeney	Turkeys - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		3	0															2			1							
Amphenicols - Florfenicol		3	0														1	1		1								
Tetracyclines - Tetracycline		3	0	3																								
Fluoroquinolones - Enrofloxacin		3	0													1	1				1							
Quinolones - Nalidixic acid		3	0	3																								
Sulphonamides - Sulfonamide		3	0												1			2										
Aminoglycosides - Streptomycin		3	0											2		1												
Aminoglycosides - Gentamicin		3	0										1							1	1							
Penicillins - Ampicillin		3	0	3																								
Cephalosporins - Cefotaxim		3	0																							1		
Cephalosporins - Ceftazidim		3	0																					1		2		
Cephalosporins - Ceftiofur		3	0																1		1	1						

S. Bredeney	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bredeney* in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bredeney Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	2						
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Blockley in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Blockley	Turkeys - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																									
Amphenicols - Florfenicol		1	0																									
Tetracyclines - Tetracycline		1	0	1																								
Fluoroquinolones - Enrofloxacin		1	0																		1							
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0				1																					
Aminoglycosides - Streptomycin		1	0			1																						
Aminoglycosides - Gentamicin		1	0																		1							
Penicillins - Ampicillin		1	0																					1				
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																									

S. Blockley	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *S. Blockley* in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Blockley Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim				1			
Cephalosporins - Ceftiofur		1					

Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - unspecified - at farm - Monitoring - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Turkeys - unspecified - at farm - Monitoring																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		1	0																			1						
Amphenicols - Florfenicol		1	0																									
Tetracyclines - Tetracycline		1	0																			1						
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																		1							
Sulphonamides - Sulfonamide		1	0																			1						
Aminoglycosides - Streptomycin		1	0														1											
Aminoglycosides - Gentamicin		1	0																					1				
Penicillins - Ampicillin		1	0																1									
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																									

S. Typhimurium	Turkeys - unspecified - at farm - Monitoring						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Turkeys - unspecified - at farm - Monitoring - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - at farm - Monitoring						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							1
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim						1	
Cephalosporins - Ceftiofur		1					

Table Antimicrobial susceptibility testing of S. Infantis in Turkeys - unspecified - at farm - Monitoring - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Turkeys - unspecified - at farm - Monitoring																									
		yes																									
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		1	0																								
Amphenicols - Florfenicol		1	0																							1	
Tetracyclines - Tetracycline		1	0				1																				
Fluoroquinolones - Enrofloxacin		1	0																						1		
Quinolones - Nalidixic acid		1	0	1																							
Sulphonamides - Sulfonamide		1	0	1																							
Aminoglycosides - Streptomycin		1	0	1																							
Aminoglycosides - Gentamicin		1	0																					1			
Penicillins - Ampicillin		1	0																							1	
Cephalosporins - Cefotaxim		1	0																								
Cephalosporins - Ceftazidim		1	0																								
Cephalosporins - Ceftiofur		1	0																					1			

S. Infantis	Turkeys - unspecified - at farm - Monitoring						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *S. Infantis* in Turkeys - unspecified - at farm - Monitoring - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - at farm - Monitoring						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim				1			
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Saintpaul	Turkeys - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																						1			
Tetracyclines - Tetracycline		1	0																	1								
Fluoroquinolones - Enrofloxacin		1	0																				1					
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0															1										
Aminoglycosides - Streptomycin		1	0												1													
Aminoglycosides - Gentamicin		1	0													1												
Penicillins - Ampicillin		1	0																			1						
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																				1					

S. Saintpaul	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Turkeys - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Saintpaul Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim			1				
Cephalosporins - Ceftazidim			1				
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Ducks - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Ducks - unspecified - at farm - animal sample - Monitoring - official sampling																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		12	0																				1		1	4		
Amphenicols - Florfenicol		12	0																	1				1	1	1		
Tetracyclines - Tetracycline		11	0															2		6	1		1			1		
Fluoroquinolones - Enrofloxacin		12	0																		1	1		1	1	5		
Quinolones - Nalidixic acid		12	0															1	2		1	2	1	2				
Sulphonamides - Sulfonamide		12	0	5						2					1	1	1	1			1							
Aminoglycosides - Streptomycin		12	0									3	2	2	2	1	2											
Aminoglycosides - Gentamicin		12	0														1			3	1	2		2		2		
Penicillins - Ampicillin		12	0																		1		3	1	1	1		
Cephalosporins - Cefotaxim		12	0																								2	
Cephalosporins - Ceftazidim		12	0																	1	1			1		2		
Cephalosporins - Ceftiofur		12	0																		1	1		1	1	5		

S. Typhimurium	Ducks - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	1	1		2			2

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Ducks - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		5		2			1
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1		1	1
Quinolones - Nalidixic acid		2		1			
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin		1					
Penicillins - Ampicillin	1	1		1		1	1
Cephalosporins - Cefotaxim		2			1	2	5
Cephalosporins - Ceftazidim		1		1		3	2
Cephalosporins - Ceftiofur				1		1	1

Table Antimicrobial susceptibility testing of S. Ohio in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data
[Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Ohio	Geese - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																									
Tetracyclines - Tetracycline		1	0																	1								
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																1									
Sulphonamides - Sulfonamide		1	0						1																			
Aminoglycosides - Streptomycin		1	0													1												
Aminoglycosides - Gentamicin		1	0																					1				
Penicillins - Ampicillin		1	0																				1					
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																								1	

S. Ohio	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Ohio* in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data
[Diffusion method]

S. Ohio Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin			1				
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim			1				
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Geese - unspecified - at farm - animal sample - Monitoring - official sampling																											
		yes																											
Antimicrobials:		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol			1	0																				1					
Amphenicols - Florfenicol			1	0																							1		
Tetracyclines - Tetracycline			1	0																	1								
Fluoroquinolones - Enrofloxacin			1	0																									
Quinolones - Nalidixic acid			1	0												1													
Aminoglycosides - Streptomycin			1	0															1										
Aminoglycosides - Gentamicin			1	0																	1								
Penicillins - Ampicillin			1	0																				1					
Cephalosporins - Cefotaxim			1	0																									
Cephalosporins - Ceftazidim			1	0																									
Cephalosporins - Ceftiofur			1	0																				1					

S. Enteritidis		Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
		yes						
		29	30	31	32	33	34	>=35
Antimicrobials:								
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim				1			
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Kottbus in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data
[Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Kottbus	Geese - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																							1		
Amphenicols - Florfenicol		1	0																							1		
Tetracyclines - Tetracycline		1	0																	1								
Fluoroquinolones - Enrofloxacin		1	0																		1							
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0										1															
Aminoglycosides - Streptomycin		1	0												1													
Aminoglycosides - Gentamicin		1	0																	1								
Penicillins - Ampicillin		1	0																	1								
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																				1					

S. Kottbus	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Kottbus* in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data
[Diffusion method]

S. Kottbus Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim			1				
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Geese - unspecified - at farm - animal sample - Monitoring - official sampling																											
		yes																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		1	0																			1							
Amphenicols - Florfenicol		1	0																							1			
Tetracyclines - Tetracycline		1	0	1																									
Fluoroquinolones - Enrofloxacin		1	0																		1								
Quinolones - Nalidixic acid		1	0	1																									
Sulphonamides - Sulfonamide		1	0	1																									
Aminoglycosides - Streptomycin		1	0							1																			
Aminoglycosides - Gentamicin		1	0																				1						
Penicillins - Ampicillin		1	0																			1							
Cephalosporins - Cefotaxim		1	0																										
Cephalosporins - Ceftazidim		1	0																										
Cephalosporins - Ceftiofur		1	0																						1				

S. Infantis	Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Thompson in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Thompson	Geese - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																							1		
Amphenicols - Florfenicol		1	0																				1					
Tetracyclines - Tetracycline		1	0																1									
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																			1						
Sulphonamides - Sulfonamide		1	0												1													
Aminoglycosides - Streptomycin		1	0										1															
Aminoglycosides - Gentamicin		1	0																	1								
Penicillins - Ampicillin		1	0																							1		
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																							1		
Cephalosporins - Ceftiofur		1	0																						1			

S. Thompson	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Thompson* in Geese - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Thompson Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim						1	
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Geese - unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		18	0																		1	2		2		5		
Amphenicols - Florfenicol		19	0																	2	1	1	1	5		2		
Tetracyclines - Tetracycline		19	0												1	1	2	5	1	3	1	1	2	1				
Fluoroquinolones - Enrofloxacin		19	0																							2		
Quinolones - Nalidixic acid		19	0											1				1		4	4	3			2	4		
Sulphonamides - Sulfonamide		18	0	4	1			1							3	3		1	1			2	1	1				
Aminoglycosides - Streptomycin		19	0	3					1				2	3	5	3	2											
Aminoglycosides - Gentamicin		19	0												2					3	4	4	2	3		1		
Penicillins - Ampicillin		23	0																3	1		3	2	5	2			
Cephalosporins - Cefotaxim		20	0																		1							
Cephalosporins - Ceftazidim		23	0																			2	1	1				
Cephalosporins - Ceftiofur		19	0																	1	1		4	4	3			

S. Typhimurium	Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	yes						
	Number of isolates available in the laboratory						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		7					1

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Geese - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1		4		1	1
Tetracyclines - Tetracycline		1					
Fluoroquinolones - Enrofloxacin	3	1	1	4	4	3	1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin		2		2			3
Cephalosporins - Cefotaxim	1	1		6	2	2	7
Cephalosporins - Ceftazidim	2	3	4	4	3	2	1
Cephalosporins - Ceftiofur	1	3		1	1		

Table Antimicrobial susceptibility testing of S. Mbandaka in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Mbandaka	Ducks - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																		1							
Amphenicols - Florfenicol		1	0																				1					
Tetracyclines - Tetracycline		1	0	1																								
Fluoroquinolones - Enrofloxacin		1	0																								1	
Quinolones - Nalidixic acid		1	0																			1						
Sulphonamides - Sulfonamide		1	0	1																								
Aminoglycosides - Streptomycin		1	0											1														
Aminoglycosides - Gentamicin		1	0																1									
Penicillins - Ampicillin		1	0	1																								
Cephalosporins - Cefotaxim		1	0																								1	
Cephalosporins - Ceftazidim		1	0																				1					
Cephalosporins - Ceftiofur		1	0																			1						

S. Mbandaka	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Mbandaka* in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Mbandaka Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Saintpaul in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Saintpaul	Ducks - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																					1				
Tetracyclines - Tetracycline		1	0	1																								
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																			1						
Sulphonamides - Sulfonamide		1	0	1																								
Aminoglycosides - Streptomycin		1	0	1																								
Aminoglycosides - Gentamicin		1	0																		1							
Penicillins - Ampicillin		1	0	1																								
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																							1		
Cephalosporins - Ceftiofur		1	0																						1			

S. Saintpaul	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Saintpaul Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Ducks - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Ducks - unspecified - at farm - animal sample - Monitoring - official sampling																											
		yes																											
Antimicrobials:		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol			2	0																									
Amphenicols - Florfenicol			2	0																							1		
Tetracyclines - Tetracycline			2	0																	1			1					
Fluoroquinolones - Enrofloxacin			2	0																					1				
Quinolones - Nalidixic acid			2	0	1																					1			
Sulphonamides - Sulfonamide			2	0	1											1													
Aminoglycosides - Streptomycin			2	0															2										
Aminoglycosides - Gentamicin			2	0																	1				1				
Penicillins - Ampicillin			2	0																					1		1		
Cephalosporins - Cefotaxim			2	0																									
Cephalosporins - Ceftazidim			2	0																									
Cephalosporins - Ceftiofur			2	0																							1		

S. Enteritidis		Ducks - unspecified - at farm - animal sample - Monitoring - official sampling						
		yes						
		29	30	31	32	33	34	>=35
Antimicrobials:								
Amphenicols - Chloramphenicol		1	1					

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Ducks - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin						1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim						1	1
Cephalosporins - Ceftazidim				2			
Cephalosporins - Ceftiofur	1						

Table Antimicrobial susceptibility testing of S. Livingstone in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Livingstone	Ducks - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		8	0																			1		2	3	2		
Amphenicols - Florfenicol		26	0																				2	21		2		
Tetracyclines - Tetracycline		8	0															2	1	1	3				1			
Fluoroquinolones - Enrofloxacin		9	0																						1			
Quinolones - Nalidixic acid		8	0																			1	2	4	1			
Sulphonamides - Sulfonamide		8	0												2	1		4							1			
Aminoglycosides - Streptomycin		8	0										1	1	2	2	1								1			
Aminoglycosides - Gentamicin		8	0												1			3		1	1	1			1			
Penicillins - Ampicillin		9	0	1																	1	1	4	1	1			
Cephalosporins - Cefotaxim		9	0																						1			
Cephalosporins - Ceftazidim		7	0																					1	1	3		
Cephalosporins - Ceftiofur		8	0																			1	1	3	1	1		

S. Livingstone	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Livingstone* in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Livingstone Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		5		2	1		
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		4	3				1
Cephalosporins - Ceftazidim		2					
Cephalosporins - Ceftiofur	1						

Table Antimicrobial susceptibility testing of S. Anatum in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data
[Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Ducks - unspecified - at farm - animal sample - Clinical investigations																											
		no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		1	0																						1				
Amphenicols - Florfenicol		1	0																					1					
Tetracyclines - Tetracycline		1	0															1											
Fluoroquinolones - Enrofloxacin		1	0																										
Quinolones - Nalidixic acid		1	0																			1							
Sulphonamides - Sulfonamide		1	0																				1						
Aminoglycosides - Streptomycin		1	0										1																
Aminoglycosides - Gentamicin		1	0															1											
Penicillins - Ampicillin		1	0																	1									
Cephalosporins - Cefotaxim		1	0																							1			
Cephalosporins - Ceftazidim		1	0																					1					
Cephalosporins - Ceftiofur		1	0																		1								

S. Anatum		Ducks - unspecified - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of *S. Anatum* in Ducks - unspecified - at farm - animal sample - Clinical investigations - quantitative data
 [Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigeons - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory			Pigeons - at farm - animal sample - Monitoring - official sampling																											
			yes																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
Amphenicols - Chloramphenicol		5	0											1													1			
Amphenicols - Florfenicol		5	0															1									1			
Tetracyclines - Tetracycline		5	0																	1		3	1							
Fluoroquinolones - Enrofloxacin		5	0																											
Quinolones - Nalidixic acid		5	0															1							3	1				
Sulphonamides - Sulfonamide		6	0									1							1	2							2			
Aminoglycosides - Streptomycin		5	0							3				2																
Aminoglycosides - Gentamicin		5	0															1		1		2	1							
Penicillins - Ampicillin		5	0																				2		1		2			
Cephalosporins - Cefotaxim		5	0																											
Cephalosporins - Ceftazidim		5	0																						1					
Cephalosporins - Ceftiofur		5	0																						2					

S. Typhimurium	Pigeons - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	yes						
	Number of isolates available in the laboratory						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1		2			

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Pigeons - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigeons - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1	2				
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1	1			2	1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2					3
Cephalosporins - Ceftazidim	1						3
Cephalosporins - Ceftiofur	1	2					

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		2	0	1																				1				
Amphenicols - Florfenicol		2	0	1																								
Tetracyclines - Tetracycline		2	0											1				1										
Fluoroquinolones - Ciprofloxacin		2	0											1						1								
Fluoroquinolones - Enrofloxacin		2	0										1											1				
Quinolones - Nalidixic acid		1	0																	1								
Sulphonamides - Sulfonamide		2	0												1	1												
Aminoglycosides - Gentamicin		2	0													1		1										
Penicillins - Ampicillin		2	0	1																1								
Cephalosporins - Cefotaxim		2	0												1													
Cephalosporins - Ceftazidim		2	0																	1	1							
Cephalosporins - Ceftiofur		1	0	1																								

S. Bovismorbificans	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bovismorbificans	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Infantis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		5	0																		3	1		1				
Amphenicols - Florfenicol		5	0																	1	3				1			
Tetracyclines - Tetracycline		5	0	2														2		1								
Fluoroquinolones - Ciprofloxacin		4	0																	1	2		1					
Fluoroquinolones - Enrofloxacin		6	0																		1	1			2	1		
Quinolones - Nalidixic acid		5	0	2																			2		1			
Sulphonamides - Sulfonamide		5	0	2												1					1		1					
Aminoglycosides - Streptomycin		5	0				1						1	1	2													
Aminoglycosides - Gentamicin		5	0													3	1								1			
Penicillins - Ampicillin		6	0																1	3	1		1					
Cephalosporins - Cefotaxim		5	0																							3		
Cephalosporins - Ceftazidim		5	0																		1		3					

S. Infantis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in *Gallus gallus* (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim			1				1
Cephalosporins - Ceftazidim							1

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																1									
Amphenicols - Florfenicol		1	0																			1						
Tetracyclines - Tetracycline		1	0													1												
Fluoroquinolones - Enrofloxacin		1	0																					1				
Quinolones - Nalidixic acid		1	0															1										
Sulphonamides - Sulfonamide		1	0												1													
Aminoglycosides - Streptomycin		1	0												1													
Aminoglycosides - Gentamicin		1	0																	1								
Penicillins - Ampicillin		1	0															1										
Cephalosporins - Cefotaxim		1	0																						1			
Cephalosporins - Ceftazidim		1	0																					1				
Cephalosporins - Ceftiofur		1	0																	1								

S. Senftenberg	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Senftenberg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		2	0																							1		
Amphenicols - Florfenicol		2	0																			1				1		
Tetracyclines - Tetracycline		2	0																		1	1						
Fluoroquinolones - Enrofloxacin		2	0																		1							
Quinolones - Nalidixic acid		2	0				1																1					
Sulphonamides - Sulfonamide		2	0	1																1								
Aminoglycosides - Streptomycin		2	0													1		1										
Aminoglycosides - Gentamicin		2	0														1				1							
Penicillins - Ampicillin		2	0													1					1							
Cephalosporins - Cefotaxim		2	0																			1						
Cephalosporins - Ceftazidim		2	0																		1							
Cephalosporins - Ceftiofur		2	0																			1		1				

S. Enteritidis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol			1				

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim						1	
Cephalosporins - Ceftazidim					1		
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Tennessee	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		3	0																		1			2				
Amphenicols - Florfenicol		3	0																					3				
Tetracyclines - Tetracycline		3	0															1		2								
Fluoroquinolones - Enrofloxacin		3	0																								1	
Quinolones - Nalidixic acid		3	0																	1	1		1					
Sulphonamides - Sulfonamide		3	0						1	1					1													
Aminoglycosides - Streptomycin		3	0						1				2															
Aminoglycosides - Gentamicin		3	0													1			1	1								
Penicillins - Ampicillin		3	0																	1	1						1	
Cephalosporins - Cefotaxim		3	0																									
Cephalosporins - Ceftazidim		3	0																			2						
Cephalosporins - Ceftiofur		3	0																		1		1	1				

S. Tennessee	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Tennessee* in *Gallus gallus* (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Tennessee Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1		1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1		1	1			
Cephalosporins - Ceftazidim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																									
Amphenicols - Florfenicol		1	0																									
Tetracyclines - Tetracycline		1	0																					1				
Fluoroquinolones - Ciprofloxacin		1	0																									
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																				1					
Sulphonamides - Sulfonamide		1	0													1												
Aminoglycosides - Streptomycin		1	0										1															
Aminoglycosides - Gentamicin		1	0																		1							
Penicillins - Ampicillin		1	0																							1		
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									

S. Typhimurium	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol						1	

Table Antimicrobial susceptibility testing of *S. Typhimurium* in *Gallus gallus* (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium	Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin		1					
Fluoroquinolones - Enrofloxacin						1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim							1

Table Antimicrobial susceptibility testing of S. Abony in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Abony	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																							1		
Amphenicols - Florfenicol		1	0																									
Tetracyclines - Tetracycline		1	0																			1						
Fluoroquinolones - Ciprofloxacin		1	0																					1				
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																				1					
Sulphonamides - Sulfonamide		1	0					1																				
Aminoglycosides - Streptomycin		1	0													1												
Aminoglycosides - Gentamicin		1	0																1									
Penicillins - Ampicillin		1	0																				1					
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									

S. Abony	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Abony* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Abony Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin						1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim		1					

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory			Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
			no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
Amphenicols - Chloramphenicol		1	0																							1				
Amphenicols - Florfenicol		1	0																							1				
Tetracyclines - Tetracycline		1	0																	1										
Fluoroquinolones - Enrofloxacin		1	0													1														
Quinolones - Nalidixic acid		1	0								1																			
Sulphonamides - Sulfonamide		1	0													1														
Aminoglycosides - Streptomycin		1	0											1																
Aminoglycosides - Gentamicin		1	0																1											
Penicillins - Ampicillin		1	0																		1									
Cephalosporins - Cefotaxim		1	0																											
Cephalosporins - Ceftazidim		1	0																					1						
Cephalosporins - Ceftiofur		1	0																		1									

S. Bovismorbificans	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim			1				
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling																											
		yes																											
Isolates out of a monitoring program (yes/no)																													
Number of isolates available in the laboratory																													
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		9	0														1		2	1		2	1	1		1			
Amphenicols - Florfenicol		9	0														1	1			2	1	1	2					
Tetracyclines - Tetracycline		9	0	2			1											1		3	2								
Fluoroquinolones - Ciprofloxacin		9	0																1	4	1		2	1					
Fluoroquinolones - Enrofloxacin		7	0																		2			1					
Quinolones - Nalidixic acid		9	0	4																	4	1							
Sulphonamides - Sulfonamide		9	0	4											2	2	1												
Aminoglycosides - Streptomycin		9	0					3					2	4															
Aminoglycosides - Gentamicin		9	0														1	3	4	1									
Penicillins - Ampicillin		9	0													1	2		1	1	1	2			1				
Cephalosporins - Cefotaxim		9	0																					2	2	3			
Cephalosporins - Ceftazidim		9	0																	1		1	2	3	1				

S. Infantis	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

S. Infantis	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol	1						
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin	1	2		1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1		1			
Cephalosporins - Ceftazidim	1						

Table Antimicrobial susceptibility testing of S. Rissen in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Rissen	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		4	0																1		2			1				
Amphenicols - Florfenicol		4	0																1	1			2					
Tetracyclines - Tetracycline		4	0															3		1								
Fluoroquinolones - Enrofloxacin		4	0																			1			1	1		
Quinolones - Nalidixic acid		4	0																1	1	1		1					
Sulphonamides - Sulfonamide		4	0	1											1	1		1										
Aminoglycosides - Streptomycin		4	0										1	1	2													
Aminoglycosides - Gentamicin		4	0											1		1	1			1								
Penicillins - Ampicillin		4	0															1		1	1			1				
Cephalosporins - Cefotaxim		4	0																				1		1			
Cephalosporins - Ceftazidim		4	0																1		1		1		1			
Cephalosporins - Ceftiofur		4	0																3				1					

S. Rissen	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Rissen* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Rissen Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1			1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		2	0																			1	1					
Amphenicols - Florfenicol		2	0																			1		1				
Tetracyclines - Tetracycline		2	0																1	1								
Fluoroquinolones - Enrofloxacin		2	0																						1			
Quinolones - Nalidixic acid		2	0																	2								
Sulphonamides - Sulfonamide		2	0	1						1																		
Aminoglycosides - Streptomycin		2	0									2																
Aminoglycosides - Gentamicin		2	0														1	1										
Penicillins - Ampicillin		2	0																	1		1						
Cephalosporins - Cefotaxim		2	0																								1	
Cephalosporins - Ceftazidim		2	0																			1			1			
Cephalosporins - Ceftiofur		2	0																	1		1						

S. Senftenberg	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Senftenberg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Tennessee	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		11	0																	4		5	1		1			
Amphenicols - Florfenicol		11	0																2	2	1	4	1	1				
Tetracyclines - Tetracycline		11	0														4	2	3	1	1							
Fluoroquinolones - Enrofloxacin		11	0																			2		1		3		
Quinolones - Nalidixic acid		11	0														1	1	1	5	2	1						
Sulphonamides - Sulfonamide		8	0										1		3	2	1		1									
Aminoglycosides - Streptomycin		11	0						3		3		5															
Aminoglycosides - Gentamicin		11	0													2	4	3	1	1								
Penicillins - Ampicillin		11	0															1	2	4	1	2	1					
Cephalosporins - Cefotaxim		10	0																					2	3	1		
Cephalosporins - Ceftazidim		11	0																1	1	1	1	1	3	2	1		
Cephalosporins - Ceftiofur		11	0																2	3	1	2	2	1				

S. Tennessee	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Tennessee* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Tennessee Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		3		2			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		3		1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		3	0																		1	1						
Amphenicols - Florfenicol		3	0																			1		1				
Tetracyclines - Tetracycline		3	0																1	2								
Fluoroquinolones - Enrofloxacin		3	0																					2				
Quinolones - Nalidixic acid		3	0															1	2									
Sulphonamides - Sulfonamide		3	0													1	1	1										
Aminoglycosides - Streptomycin		3	0											2	1													
Aminoglycosides - Gentamicin		3	0																2	1								
Penicillins - Ampicillin		3	0																		3							
Cephalosporins - Cefotaxim		3	0																							1		
Cephalosporins - Ceftazidim		3	0																				3					
Cephalosporins - Ceftiofur		3	0																1	1			1					

S. Typhimurium	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol			1				

Table Antimicrobial susceptibility testing of *S. Typhimurium* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1				1	
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations
- quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		4	0																		1			2				
Amphenicols - Florfenicol		4	0																		1	1		2				
Tetracyclines - Tetracycline		4	0															1	1	1		1						
Fluoroquinolones - Enrofloxacin		4	0																			1				1		
Quinolones - Nalidixic acid		4	0																1				1	2				
Sulphonamides - Sulfonamide		4	0	1						1					1	1												
Aminoglycosides - Streptomycin		4	0								1			2	1													
Aminoglycosides - Gentamicin		4	0														1	1		2								
Penicillins - Ampicillin		4	0															1				3						
Cephalosporins - Cefotaxim		4	0																		1					1		
Cephalosporins - Ceftazidim		4	0																1					1		1		
Cephalosporins - Ceftiofur		4	0																1			1	1	1				

Salmonella spp.	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *Salmonella* spp. in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Clinical investigations
- quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1		1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				2			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bredeney in Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bredeney	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																		1							
Tetracyclines - Tetracycline		1	0				1																					
Fluoroquinolones - Enrofloxacin		1	0																		1							
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0														1											
Aminoglycosides - Streptomycin		1	0											1														
Aminoglycosides - Gentamicin		1	0														1											
Penicillins - Ampicillin		1	0	1																								
Cephalosporins - Cefotaxim		1	0																							1		
Cephalosporins - Ceftazidim		1	0																				1					
Cephalosporins - Ceftiofur		1	0																	1								

S. Bredeney	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bredeney* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bredeney Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		6	0																		1	1	1	1	1	1		
Amphenicols - Florfenicol		6	0																		2		1	2		1		
Tetracyclines - Tetracycline		6	0	1															2	3								
Fluoroquinolones - Enrofloxacin		6	0																		2			1	1	1		
Quinolones - Nalidixic acid		6	0	2																2		1		1				
Sulphonamides - Sulfonamide		6	0		1					2						2	1											
Aminoglycosides - Streptomycin		6	0												1		2	2	1									
Aminoglycosides - Gentamicin		6	0															2	2	1	1							
Penicillins - Ampicillin		6	0															1			2	3						
Cephalosporins - Cefotaxim		6	0																					1		2		
Cephalosporins - Ceftazidim		6	0																		1			3		1		
Cephalosporins - Ceftiofur		6	0																1	2	1		1	1				

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2		1			
Cephalosporins - Ceftazidim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations
- quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																						1			
Tetracyclines - Tetracycline		1	0																			1						
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																			1						
Sulphonamides - Sulfonamide		1	0							1																		
Aminoglycosides - Streptomycin		1	0											1														
Aminoglycosides - Gentamicin		1	0																1									
Penicillins - Ampicillin		1	0																				1					
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																						1			
Cephalosporins - Ceftiofur		1	0																								1	

S. Bovismorbificans	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations
- quantitative data [Diffusion method]

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bredeney in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bredeney	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																1									
Amphenicols - Florfenicol		1	0															1										
Tetracyclines - Tetracycline		1	0	1																								
Fluoroquinolones - Enrofloxacin		1	0															1										
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0	1																								
Aminoglycosides - Streptomycin		1	0						1																			
Aminoglycosides - Gentamicin		1	0														1											
Penicillins - Ampicillin		1	0	1																								
Cephalosporins - Cefotaxim		1	0																						1			
Cephalosporins - Ceftazidim		1	0																				1					
Cephalosporins - Ceftiofur		1	0																1									

S. Bredeney	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bredeney* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bredeney Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		5	0			1																	1		1	2		
Amphenicols - Florfenicol		5	0	1																		1				3		
Tetracyclines - Tetracycline		5	0												1						4							
Fluoroquinolones - Enrofloxacin		5	0											1									1			1		
Quinolones - Nalidixic acid		5	0	1															1	1	1	1						
Sulphonamides - Sulfonamide		5	0	2						2							1											
Aminoglycosides - Streptomycin		5	0										1			1	1	1	1									
Aminoglycosides - Gentamicin		5	0														2	1	2									
Penicillins - Ampicillin		5	0	1															1	3								
Cephalosporins - Cefotaxim		5	0									1												1		1		
Cephalosporins - Ceftazidim		5	0																			1	1	1				
Cephalosporins - Ceftiofur		5	0												1						2		2					

S. Enteritidis	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		2					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1		1	
Cephalosporins - Ceftazidim	1	1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																									
		Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling																									
		yes																									
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		52	0													1	7	11	5	8	7	2	2	6	1	1	
Amphenicols - Florfenicol		52	0												1		8	9	9	7	7	5	1	2	2		
Tetracyclines - Tetracycline		51	0	34		4	7	1										2		3							
Fluoroquinolones - Enrofloxacin		51	0							1			2	8		8	4	6	6		13	1		1			
Quinolones - Nalidixic acid		52	0	50	1																				1		
Sulphonamides - Sulfonamide		52	0	48			1						1			1	1										
Aminoglycosides - Streptomycin		52	0		1		5	6	23		10		3	1	1	2											
Aminoglycosides - Gentamicin		52	0												2	5	5	7	15	10	1	5		2			
Penicillins - Ampicillin		51	0	1									1		3	3	8	11	6	3	8	3	1	2		1	
Cephalosporins - Cefotaxim		53	0																	1	3	1	3	9	5	15	
Cephalosporins - Ceftazidim		51	0															1	2	1	6	5	12	8	8	2	
Cephalosporins - Ceftiofur		51	0																14	19	10	2	2	1	1		

S. Infantis	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *S. Infantis* in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Infantis	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin					1		
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	7	2		1	3	2	1
Cephalosporins - Ceftazidim	2	3					1
Cephalosporins - Ceftiofur		1				1	

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Kentucky Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
		no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		2	0																	1							1		
Amphenicols - Florfenicol		2	0																			2							
Tetracyclines - Tetracycline		2	0	1			1																						
Fluoroquinolones - Enrofloxacin		2	0		1			1																					
Quinolones - Nalidixic acid		1	0	1																									
Sulphonamides - Sulfonamide		2	0	1	1																								
Aminoglycosides - Streptomycin		2	0			1			1																				
Aminoglycosides - Gentamicin		2	0							2																			
Penicillins - Ampicillin		2	0	2																									
Cephalosporins - Cefotaxim		2	0																								1		
Cephalosporins - Ceftazidim		2	0																				1	1					
Cephalosporins - Ceftiofur		2	0																1				1						

S. Kentucky		Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of *S. Kentucky* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Kentucky Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Menston in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Menston Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Zone diameter (mm), number of isolates with a zone of inhibition equal to Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
		no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		1	0																					1					
Amphenicols - Florfenicol		1	0																				1						
Tetracyclines - Tetracycline		1	0																1										
Fluoroquinolones - Ciprofloxacin		1	0																										
Fluoroquinolones - Enrofloxacin		1	0															1											
Quinolones - Nalidixic acid		1	0															1											
Sulphonamides - Sulfonamide		1	0														1												
Aminoglycosides - Streptomycin		1	0										1																
Aminoglycosides - Gentamicin		1	0																	1									
Penicillins - Ampicillin		1	0																			1							
Cephalosporins - Cefotaxim		1	0																										
Cephalosporins - Ceftazidim		1	0																							1			
Cephalosporins - Ceftiofur		1	0																		1								

Table Antimicrobial susceptibility testing of *S. Menston* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Menston	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin	1						
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1						
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Ohio	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		2	0																1	1								
Amphenicols - Florfenicol		2	0															1		1								
Tetracyclines - Tetracycline		2	0														1			1								
Fluoroquinolones - Enrofloxacin		2	0																		1							
Quinolones - Nalidixic acid		2	0																1	1								
Sulphonamides - Sulfonamide		2	0																1				1					
Aminoglycosides - Streptomycin		2	0															1	1									
Aminoglycosides - Gentamicin		2	0															1		1								
Penicillins - Ampicillin		2	0																2									
Cephalosporins - Cefotaxim		2	0																					1		1		
Cephalosporins - Ceftazidim		2	0																					1		1		
Cephalosporins - Ceftiofur		2	0																		2							

S. Ohio	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Ohio Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																			1						
Amphenicols - Florfenicol		1	0																					1				
Tetracyclines - Tetracycline		1	0																		1							
Fluoroquinolones - Enrofloxacin		1	0																									
Quinolones - Nalidixic acid		1	0																1									
Sulphonamides - Sulfonamide		1	0																					1				
Aminoglycosides - Streptomycin		1	0																1									
Aminoglycosides - Gentamicin		1	0																		1							
Penicillins - Ampicillin		1	0																1									
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																						1			
Cephalosporins - Ceftiofur		1	0																		1							

S. Senftenberg	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Senftenberg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		3	0																	1	1					1		
Amphenicols - Florfenicol		3	0																	1		1					1	
Tetracyclines - Tetracycline		3	0	1													1					1						
Fluoroquinolones - Enrofloxacin		3	0																		1	1						
Quinolones - Nalidixic acid		3	0														2			1								
Sulphonamides - Sulfonamide		3	0	2												1												
Aminoglycosides - Streptomycin		3	0	1							1			1														
Aminoglycosides - Gentamicin		3	0														1		1	1								
Penicillins - Ampicillin		3	0	1														1						1				
Cephalosporins - Cefotaxim		3	0																		1						1	
Cephalosporins - Ceftazidim		3	0														1					1						
Cephalosporins - Ceftiofur		3	0																1		1			1				

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Typhimurium* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim			1				
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Livingstone in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Livingstone	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		6	0							1										1		1		1	2			
Amphenicols - Florfenicol		6	0																		2	1	2	1				
Tetracyclines - Tetracycline		6	0															1	1		4							
Fluoroquinolones - Enrofloxacin		6	0																					1	1			
Quinolones - Nalidixic acid		6	0															1			2	2	1					
Sulphonamides - Sulfonamide		6	0							1					3	1		1										
Aminoglycosides - Streptomycin		6	0										1	3		2												
Aminoglycosides - Gentamicin		6	0														1	2	1	1	1							
Penicillins - Ampicillin		6	0	2																1	1		1		1			
Cephalosporins - Cefotaxim		6	0																						1	1		
Cephalosporins - Ceftazidim		6	0																				2	1		1		

S. Livingstone	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations							
	no							
	29	30	31	32	33	34	>=35	
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Livingstone Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		2	1			1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				4			
Cephalosporins - Ceftazidim	1	1					

Table Antimicrobial susceptibility testing of S. Anatum in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Anatum		Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
		no																											
		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:		1	0																					1					
Amphenicols - Chloramphenicol		1	0																										
Amphenicols - Florfenicol		1	0																										
Tetracyclines - Tetracycline		1	0																	1									
Fluoroquinolones - Enrofloxacin		1	0																										
Quinolones - Nalidixic acid		1	0																	1									
Aminoglycosides - Streptomycin		1	0										1																
Aminoglycosides - Gentamicin		1	0	1																									
Penicillins - Ampicillin		1	0																		1								
Cephalosporins - Cefotaxim		1	0																										
Cephalosporins - Ceftazidim		1	0																					1					
Cephalosporins - Ceftiofur		1	0																		1								

S. Anatum		Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
		no						
		29	30	31	32	33	34	>=35
Antimicrobials:								
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol			1					

Table Antimicrobial susceptibility testing of *S. Anatum* in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations																											
	no																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																				1					
Amphenicols - Florfenicol		1	0																			1						
Tetracyclines - Tetracycline		1	0	1																								
Fluoroquinolones - Enrofloxacin		1	0																				1					
Quinolones - Nalidixic acid		1	0																1									
Sulphonamides - Sulfonamide		1	0	1																								
Aminoglycosides - Streptomycin		1	0	1																								
Aminoglycosides - Gentamicin		1	0														1											
Penicillins - Ampicillin		1	0	1																								
Cephalosporins - Cefotaxim		1	0																							1		
Cephalosporins - Ceftazidim		1	0																			1						

Salmonella spp.	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations							
	no							
Antimicrobials:	29	30	31	32	33	34	>=35	
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								

Table Antimicrobial susceptibility testing of *Salmonella* spp. in *Gallus gallus* (fowl) - broilers - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Infantis		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations																											
		Isolates out of a monitoring program (yes/no)																											
		yes																											
Antimicrobials:		Number of isolates available in the laboratory																											
		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol			4	0													1									1	1	1	
Amphenicols - Florfenicol			4	0																1			1			2			
Tetracyclines - Tetracycline			4	0	1												1		1	1									
Fluoroquinolones - Enrofloxacin			4	0											1							2	1						
Quinolones - Nalidixic acid			4	0	4																								
Sulphonamides - Sulfonamide			4	0	3					1																			
Aminoglycosides - Streptomycin			4	0						1					1	1	1												
Aminoglycosides - Gentamicin			4	0													1				2					1			
Penicillins - Ampicillin			4	0									1									3							
Cephalosporins - Cefotaxim			4	0																				1					
Cephalosporins - Ceftazidim			4	0																			1				1	1	
Cephalosporins - Ceftiofur			4	0														1		1	1	1							

S. Infantis	Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in *Gallus gallus* (fowl) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1	1	1			
Cephalosporins - Ceftazidim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Kottbus in Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Kottbus	Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																				1					
Tetracyclines - Tetracycline		1	0														1											
Fluoroquinolones - Enrofloxacin		1	0																		1							
Quinolones - Nalidixic acid		1	0	1																								
Sulphonamides - Sulfonamide		1	0													1												
Aminoglycosides - Streptomycin		1	0										1															
Aminoglycosides - Gentamicin		1	0															1										
Penicillins - Ampicillin		1	0																1									
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																					1				
Cephalosporins - Ceftiofur		1	0																					1				

S. Kottbus	Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Kottbus* in *Gallus gallus* (fowl) - unspecified - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Kottbus Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Choleraesuis in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Choleraesuis	Pigs - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		4	0	3																		1						
Amphenicols - Florfenicol		4	0	3														1										
Tetracyclines - Tetracycline		4	0	3														1										
Quinolones - Nalidixic acid		4	0															2	1	1								
Sulphonamides - Sulfonamide		4	0	4																								
Aminoglycosides - Streptomycin		4	0	3					1																			
Aminoglycosides - Gentamicin		4	0														1	2	1									
Penicillins - Ampicillin		4	0	3														1										
Cephalosporins - Cefotaxim		4	0																			2					1	
Cephalosporins - Ceftiofur		4	0																1	1		2						

S. Choleraesuis	Pigs - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							

Table Antimicrobial susceptibility testing of *S. Choleraesuis* in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Choleraesuis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Pigs - at farm - animal sample - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		8	0	2																2			2	1				
Amphenicols - Florfenicol		7	0	1							1										1	1	1	1			1	
Tetracyclines - Tetracycline		7	0	2	1					1									1		1		1					
Fluoroquinolones - Enrofloxacin		7	0															1						2	2	1		
Quinolones - Nalidixic acid		8	0	1													1	3	1	1			1					
Sulphonamides - Sulfonamide		7	0	5						1	1																	
Aminoglycosides - Streptomycin		7	0	4		1				1				1														
Aminoglycosides - Gentamicin		7	0											1					3	1	1			1				
Penicillins - Ampicillin		7	0	5																1	1							
Cephalosporins - Cefotaxim		8	0																					1	1	3		
Cephalosporins - Ceftazidim		7	0																	1		1	1	1	1	1		
Cephalosporins - Ceftiofur		7	0																	3	1	3						

Salmonella spp.	Pigs - at farm - animal sample - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol			1				

Table Antimicrobial susceptibility testing of *Salmonella* spp. in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	no						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin						1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	2	1					
Cephalosporins - Ceftazidim	1						
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Snakes - unspecified - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Snakes - unspecified - Clinical investigations																											
	no																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		2	0																			1						
Amphenicols - Florfenicol		1	0																					1				
Tetracyclines - Tetracycline		1	0																				1					
Fluoroquinolones - Enrofloxacin		1	0																					1				
Quinolones - Nalidixic acid		2	0	1																	1							
Sulphonamides - Sulfonamide		1	0																	1								
Aminoglycosides - Streptomycin		1	0											1														
Aminoglycosides - Gentamicin		2	0														1								1			
Penicillins - Ampicillin		2	0																1					1				
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																								1	
Cephalosporins - Ceftiofur		1	0																				1					

Salmonella spp.	Snakes - unspecified - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	1						

Table Antimicrobial susceptibility testing of *Salmonella* spp. in Snakes - unspecified - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Snakes - unspecified - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Blockley in Pheasants - at farm - Clinical investigations - quantitative data [Diffusion method]

S. Blockley Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Pheasants - at farm - Clinical investigations																											
		no																											
		Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:		1	0															1											
Amphenicols - Chloramphenicol		1	0																	1									
Amphenicols - Florfenicol		1	0																	1									
Tetracyclines - Tetracycline		1	0	1																									
Fluoroquinolones - Enrofloxacin		1	0														1												
Quinolones - Nalidixic acid		1	0	1																									
Sulphonamides - Sulfonamide		1	0	1																									
Aminoglycosides - Streptomycin		1	0			1																							
Aminoglycosides - Gentamicin		1	0													1													
Penicillins - Ampicillin		1	0												1														
Cephalosporins - Cefotaxim		1	0																										
Cephalosporins - Ceftazidim		1	0																		1								
Cephalosporins - Ceftiofur		1	0														1												

S. Blockley		Pheasants - at farm - Clinical investigations						
Isolates out of a monitoring program (yes/no)		no						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of *S. Blockley* in Pheasants - at farm - Clinical investigations - quantitative data [Diffusion method]

S. Blockley Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pheasants - at farm - Clinical investigations						
	no						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		5	0																			1		1		2		
Amphenicols - Florfenicol		5	0																			1			1	1		
Tetracyclines - Tetracycline		5	0															1			1	3						
Fluoroquinolones - Ciprofloxacin		5	0																		1	2	1	1				
Fluoroquinolones - Enrofloxacin		5	0																							4		
Quinolones - Nalidixic acid		5	0															1	2	1	1							
Sulphonamides - Sulfonamide		5	0										1		2	1				1								
Aminoglycosides - Streptomycin		5	0						1				3	1														
Aminoglycosides - Gentamicin		5	0																	2	2	1						
Penicillins - Ampicillin		5	0																		2	3						
Cephalosporins - Cefotaxim		5	0																									
Cephalosporins - Ceftazidim		5	0																		1	1		1		2		

S. Typhimurium	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol			1				

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1		1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin	1						
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2		3			
Cephalosporins - Ceftazidim							

Table Antimicrobial susceptibility testing of S. Brandenburg in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Brandenburg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
		yes																											
		Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol			1	0																1									
Amphenicols - Florfenicol			1	0																		1							
Quinolones - Nalidixic acid			1	0																1									
Sulphonamides - Sulfonamide			1	0	1																								
Aminoglycosides - Streptomycin			1	0	1																								
Aminoglycosides - Gentamicin			1	0																1									
Penicillins - Ampicillin			1	0																1									
Cephalosporins - Cefotaxim			1	0																							1		
Cephalosporins - Ceftazidim			1	0																				1					
Cephalosporins - Ceftiofur			1	0																	1								

S. Brandenburg		Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
Isolates out of a monitoring program (yes/no)		yes						
Number of isolates available in the laboratory								
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol								
Quinolones - Nalidixic acid								

Table Antimicrobial susceptibility testing of S. Brandenburg in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Brandenburg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		16	0													1			1	3	2	4	4	1				
Amphenicols - Florfenicol		16	0															1		2	1	4	1	5	1			
Tetracyclines - Tetracycline		16	0														2	4	6	2	2							
Fluoroquinolones - Enrofloxacin		16	0																		1	1	1		4	8		
Quinolones - Nalidixic acid		16	0															3	3	7	3							
Sulphonamides - Sulfonamide		16	0	5		1	2	1	2	3		1			1													
Aminoglycosides - Streptomycin		16	0								7		7	2														
Aminoglycosides - Gentamicin		16	0												1	3	4	4	4									
Penicillins - Ampicillin		16	0												1	1	1	3	1	7	2							
Cephalosporins - Cefotaxim		16	0																		4	1		2	2	2		
Cephalosporins - Ceftazidim		16	0																	3	1	7	1	2		2		
Cephalosporins - Ceftiofur		16	0														1		3	3	8	1						

S. Bovismorbificans	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1						
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		3		2			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																			1						
Amphenicols - Florfenicol		1	0																						1			
Tetracyclines - Tetracycline		1	0															1										
Fluoroquinolones - Enrofloxacin		1	0																						1			
Quinolones - Nalidixic acid		1	0																		1							
Sulphonamides - Sulfonamide		1	0									1																
Aminoglycosides - Streptomycin		1	0															1										
Aminoglycosides - Gentamicin		1	0														1											
Penicillins - Ampicillin		1	0																		1							
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																						1			
Cephalosporins - Ceftiofur		1	0																		1							

Salmonella spp.	Cattle (bovine animals) - at farm - animal sample - Clinical investigations							
	Isolates out of a monitoring program (yes/no)							
	Number of isolates available in the laboratory							
	Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of Salmonella spp. in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1						
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Pigs - at farm - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - Clinical investigations																										
	yes																										
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Amphenicols - Chloramphenicol			6	0																		3				1	2
Amphenicols - Florfenicol			6	0																1			2	1	2		
Tetracyclines - Tetracycline			6	0	2													1	1	2							
Fluoroquinolones - Enrofloxacin			6	0																			1		1	1	
Quinolones - Nalidixic acid			6	0														1		2	1	2					
Sulphonamides - Sulfonamide			6	0	5					1																	
Aminoglycosides - Streptomycin			6	0	3									1	1	1											
Aminoglycosides - Gentamicin			6	0													1		2		3						
Penicillins - Ampicillin			6	0	2															1	3						
Cephalosporins - Cefotaxim			6	0																						1	3
Cephalosporins - Ceftazidim			6	0																			2	1	1		2
Cephalosporins - Ceftiofur			5	0																	2	1	2				

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *Salmonella* spp. in Pigs - at farm - Clinical investigations - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	2	1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1		1			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Typhimurium	Pigs - at farm - animal sample - Clinical investigations																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		10	0	5																			3				1	
Amphenicols - Florfenicol		10	0							1		3								1	1	2	1	1				
Tetracyclines - Tetracycline		10	0	4						2			2								1	1						
Fluoroquinolones - Enrofloxacin		10	0																			2	2		1	2		
Quinolones - Nalidixic acid		10	0												1	1	1		1	3	2		1					
Sulphonamides - Sulfonamide		10	0	8											1	1												
Aminoglycosides - Streptomycin		10	0	3		3	1						2	1														
Aminoglycosides - Gentamicin		10	0														1	3	2	3	1							
Penicillins - Ampicillin		10	0	8																		2						
Cephalosporins - Cefotaxim		10	0																				3	2	1			
Cephalosporins - Ceftazidim		10	0																	1	2	3	1				1	
Cephalosporins - Ceftiofur		10	0																1	3	1	1	3	1				

S. Typhimurium	Pigs - at farm - animal sample - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Typhimurium Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		3					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim			1	3			
Cephalosporins - Ceftazidim	1	1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Infantis	Pigs - at farm - animal sample - Clinical investigations																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		14	0													1		1			1	11						
Amphenicols - Florfenicol		5	0														1	1		1	1		1					
Fluoroquinolones - Enrofloxacin		5	0												2			1			1		1					
Quinolones - Nalidixic acid		5	0	5																								
Aminoglycosides - Streptomycin		5	0						3		1		1															
Aminoglycosides - Gentamicin		5	0													1		3	1									
Penicillins - Ampicillin		6	0													2			1	2			1					
Cephalosporins - Cefotaxim		5	0																						3		1	
Cephalosporins - Ceftazidim		5	0															1				1	2		1			
Cephalosporins - Ceftiofur		5	0													1				2	1		1					

S. Infantis	Pigs - at farm - animal sample - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							
Amphenicols - Florfenicol							
Fluoroquinolones - Enrofloxacin							

Table Antimicrobial susceptibility testing of *S. Infantis* in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Quinolones - Nalidixic acid							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim			1				
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Derby in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Derby	Pigs - at farm - animal sample - Clinical investigations																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
	Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Amphenicols - Chloramphenicol		9	0	2														2		1	2		1			1		
Amphenicols - Florfenicol		9	0	2													1		1	2		2	1					
Tetracyclines - Tetracycline		9	0	3												1		1	2	1			1					
Fluoroquinolones - Ciprofloxacin		9	0																1	2	3	1	1	1				
Fluoroquinolones - Enrofloxacin		9	0																				2	2	3			
Quinolones - Nalidixic acid		8	0														1		2	1	1	1	2					
Sulphonamides - Sulfonamide		9	0	6											2	1												
Aminoglycosides - Streptomycin		9	0	1			1						2	2	2	1												
Aminoglycosides - Gentamicin		9	0												2	1	2	2	1	1								
Penicillins - Ampicillin		9	0	3														1	1	2	1	1						
Cephalosporins - Cefotaxim		9	0																			1	1	2		3		
Cephalosporins - Ceftazidim		9	0																	1		3	2	1	1			

S. Derby	Pigs - at farm - animal sample - Clinical investigations						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of S. Derby in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Derby Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Ciprofloxacin							
Fluoroquinolones - Enrofloxacin	1		1				
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		1		1			
Cephalosporins - Ceftazidim		1					

Table Antimicrobial susceptibility testing of *S. Choleraesuis* in Pigs - at farm - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Choleraesuis	Pigs - at farm - Clinical investigations																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		2	0																							1		
Amphenicols - Florfenicol		2	0																							2		
Tetracyclines - Tetracycline		2	0																		1	1						
Fluoroquinolones - Enrofloxacin		2	0																									
Quinolones - Nalidixic acid		2	0																			1	1					
Sulphonamides - Sulfonamide		2	0											2														
Aminoglycosides - Streptomycin		2	0			1	1																					
Aminoglycosides - Gentamicin		2	0																		1		1					
Penicillins - Ampicillin		2	0																	1			1					
Cephalosporins - Cefotaxim		2	0																									
Cephalosporins - Ceftazidim		2	0																									
Cephalosporins - Ceftiofur		2	0																		1		1					

S. Choleraesuis	Pigs - at farm - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of *S. Choleraesuis* in Pigs - at farm - Clinical investigations - quantitative data [Diffusion method]

S. Choleraesuis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1				1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim						1	1
Cephalosporins - Ceftazidim		2					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Anatum in Pigs - at farm - animal sample - Monitoring - official sampling - quantitative data
[Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Anatum	Pigs - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		1	0																					1				
Amphenicols - Florfenicol		1	0																					1				
Tetracyclines - Tetracycline		1	0																			1						
Fluoroquinolones - Enrofloxacin		1	0																							1		
Quinolones - Nalidixic acid		1	0																			1						
Sulphonamides - Sulfonamide		1	0																	1								
Aminoglycosides - Streptomycin		1	0								1																	
Aminoglycosides - Gentamicin		1	0																	1								
Penicillins - Ampicillin		1	0																			1						
Cephalosporins - Cefotaxim		1	0																									
Cephalosporins - Ceftazidim		1	0																									
Cephalosporins - Ceftiofur		1	0																				1					

S. Anatum	Pigs - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	yes						
	Number of isolates available in the laboratory						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Anatum* in Pigs - at farm - animal sample - Monitoring - official sampling - quantitative data
[Diffusion method]

S. Anatum Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Brandenburg in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Brandenburg	Pigs - at farm - animal sample - Clinical investigations																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		4	0																	1				1		2		
Amphenicols - Florfenicol		4	0																	2		1						
Tetracyclines - Tetracycline		4	0	4																								
Quinolones - Nalidixic acid		4	0																2	2								
Sulphonamides - Sulfonamide		4	0	4																								
Aminoglycosides - Streptomycin		4	0	3	1																							
Aminoglycosides - Gentamicin		4	0														1	1	1	1								
Penicillins - Ampicillin		4	0	4																								
Cephalosporins - Cefotaxim		4	0																						1	3		
Cephalosporins - Ceftazidim		4	0																		2	2						
Cephalosporins - Ceftiofur		4	0																1	2		1						

S. Brandenburg	Pigs - at farm - animal sample - Clinical investigations							
	Isolates out of a monitoring program (yes/no)							
	Number of isolates available in the laboratory							
	29	30	31	32	33	34	>=35	
Amphenicols - Chloramphenicol								
Amphenicols - Florfenicol						1		

Table Antimicrobial susceptibility testing of *S. Brandenburg* in Pigs - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

S. Brandenburg Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - at farm - animal sample - Clinical investigations						
	yes						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Tetracyclines - Tetracycline							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		2	0																1									
Amphenicols - Florfenicol		2	0																1									
Tetracyclines - Tetracycline		2	0																1					1				
Fluoroquinolones - Enrofloxacin		2	0																		1							
Quinolones - Nalidixic acid		2	0														1											
Sulphonamides - Sulfonamide		2	0	2																								
Aminoglycosides - Streptomycin		2	0											1			1											
Aminoglycosides - Gentamicin		2	0													1			1									
Penicillins - Ampicillin		2	0														1								1			
Cephalosporins - Cefotaxim		2	0																						1			
Cephalosporins - Ceftazidim		2	0																		1							
Cephalosporins - Ceftiofur		2	0																1									

S. Enteritidis	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol				1			

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Enteritidis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1						
Quinolones - Nalidixic acid		1					
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim							1
Cephalosporins - Ceftazidim				1			
Cephalosporins - Ceftiofur						1	

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory			Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling																											
			yes																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
Amphenicols - Chloramphenicol		2	0																			1				1				
Amphenicols - Florfenicol		2	0																			1								
Tetracyclines - Tetracycline		2	0																	1			1							
Fluoroquinolones - Enrofloxacin		2	0																					1						
Quinolones - Nalidixic acid		2	0																1				1							
Sulphonamides - Sulfonamide		2	0						1						1															
Aminoglycosides - Streptomycin		2	0										2																	
Aminoglycosides - Gentamicin		2	0															1		1										
Penicillins - Ampicillin		2	0																	1		1								
Cephalosporins - Cefotaxim		2	0																						1					
Cephalosporins - Ceftazidim		2	0																			1								
Cephalosporins - Ceftiofur		2	0																		1			1						

S. Bovismorbificans	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

S. Bovismorbificans Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		1					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin				1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim				1			
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling																											
		yes																											
		96																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		49	0													8	1	8	7	12	3	2	3	5					
Amphenicols - Florfenicol		49	0												1		12	7	3	7	6	4	4	5					
Tetracyclines - Tetracycline		49	0	36		4	3	1						1	1	1	2												
Fluoroquinolones - Enrofloxacin		49	0										2	14		8	6	5	1		12		1						
Quinolones - Nalidixic acid		49	0	47												1	1												
Sulphonamides - Sulfonamide		49	0				1	7	29		4		6	1	1														
Aminoglycosides - Streptomycin		49	0				1	7	29		4		6	1	1														
Aminoglycosides - Gentamicin		49	0												1	5	8	16	11	5	1	1				1			
Penicillins - Ampicillin		49	0	2											4	4	7	11	6	9	4		2						
Cephalosporins - Cefotaxim		49	0																		10	2	3	10	4	8			
Cephalosporins - Ceftazidim		49	0														1	1	2	6	2	16	8	9	1	3			
Cephalosporins - Ceftiofur		49	0												1				20	13	8	5	2						

S. Infantis	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
	96						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of *S. Infantis* in *Gallus gallus* (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling
- quantitative data [Diffusion method]

S. Infantis Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
	96						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	2	5	2	3			
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of Salmonella spp. in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		8	0															3	3			1				1		
Amphenicols - Florfenicol		9	0														1	3	1	2		1				1		
Tetracyclines - Tetracycline		9	0	5		1									1		1	1										
Fluoroquinolones - Enrofloxacin		8	0										1	2			2		1		1							
Quinolones - Nalidixic acid		9	0	8																	1							
Sulphonamides - Sulfonamide		9	0	7												1					1							
Aminoglycosides - Streptomycin		9	0				1		4				3				1											
Aminoglycosides - Gentamicin		9	0													1	2	3	2	1								
Penicillins - Ampicillin		9	0														2	3	1	1	2							
Cephalosporins - Cefotaxim		9	0																		2		2	1	1			
Cephalosporins - Ceftazidim		9	0																1		2	2	2	1				
Cephalosporins - Ceftiofur		9	0																4	3		1			1			

Salmonella spp.	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of Salmonella spp. in Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling - quantitative data [Diffusion method]

Salmonella spp. Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - at farm - animal sample - Monitoring - official sampling						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		1					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		3					
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

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

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

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

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

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

Test Method Used	Standard methods used for testing
Disc diffusion	EFFA Q 2006 045

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Amphenicols	Chloramphenicol	30	16	15
	Florfenicol	0	0	0
Tetracyclines	Tetracycline	30	12	11
Fluoroquinolones	Ciprofloxacin	5	30	29
	Enrofloxacin	0	0	0
Quinolones	Nalidixic acid	30	19	18
Trimethoprim	Trimethoprim	5	17	16
Sulphonamides	Sulfonamide	0	0	0
	Sulphonamides	0	0	0
	Sulfamethoxazol	25	7	6
Aminoglycosides	Streptomycin	10	12	11
	Gentamicin	10	16	15
	Neomycin	30	18	17

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

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Kanamycin	30	18	17
Trimethoprim + Sulphonamides	Trimethoprim + Sulphonamides	5	17	16
Cephalosporins	3rd generation cephalosporins	0	0	0
	Cefotaxim	30	28	27
	Cephalothin	30	18	17
Penicillins	Ampicillin	10	18	17
	Amoxicillin / Clavulanic acid	10/20	21	20

2.2 CAMPYLOBACTERIOSIS

2.2.1 General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

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

The main source of human campylobacter infections in Hungary is raw meat especially poultry meat. The seasonal prevalence of campylobacters in raw chicken meat shows a strong correlation with the seasonal distribution of human cases. The prevalence in raw milk is low, but it can mean a possible source in some cases. As typing of Campylobacter of food origin is not performed at a large scale, PFGE and other molecular based methods are used mainly for outbreak investigations and in small scale regional studies, the identification of sources should be improved in the future.

Recent actions taken to control the zoonoses

Actions specifically used for the control of campylobacters are not implemented in Hungary. Hygienic measurements used in the primary production (all in -all out systems, cleaning, disinfection, pest control) HACCP and GHP systems at slaughterhouses, improvement of the packaging of raw meat, labelling the minced meat and meat preparations with the requirement of heat treatment before consumption are the main actions in use.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection between the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the campylobacter infection is laboratory confirmed.

Probable case: a clinically compatible case that is not confirmed by laboratory investigation, but it has an epidemiological link to a confirmed campylobacter outbreak.

Diagnostic/analytical methods used

Campylobacter isolates are obtained by culturing the faeces samples of the patients on selective-differentiating media, using reduced oxygen tension and special incubation temperature, followed by biochemical tests.

Notification system in place

The laboratories of NPHMOS have been able to identify campylobacters since 1987. Human cases have been notifiable since 1998. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS. Hungary has also a laboratory based surveillance system, and the NPHMOS has representative dataset from most of the microbiological laboratories about the laboratory investigated cases (since 2003 antibiotic resistances have also been reported from 5 regional laboratories of NPHMOS and from a number of laboratories of universities or hospitals).

The illness is reported first as enteritis infectiosa syndrome on the basis of the symptoms. Having the results of the laboratory tests this syndrome-based diagnose is modified to etiology-based diagnose. In some cases the reporting follows only the available laboratory test results.

History of the disease and/or infection in the country

The laboratories of NPHMOS have been able to identify campylobacters since 1987. In 1990 the National Centre for Epidemiology prepared a guideline on campylobacter enteritis, and then the collection of data on campylobacteriosis was started on this basis. The number of isolates increased from 5 500/year in 1990 to 12 000/year in 1996. Since 1998 this number has varied between 9 500 – 11 500 /year. Human cases have been notifiable since 1998, so the laboratory and clinical surveillance have been linked in this year.

The number of registered cases remained around 8 300-9 200 between 1998 and 2004 (incidence: 81,6 –

91,0 /100 000 inhabitants/year).

Altogether four death cases were registered between 1998 and 2004 (case fatality rate ranged between 0,0 – 0,02%/year). The highest age-specific incidence was observed among children under five years in all periods, and the incidence has declined with the progressing of the age.

The 95% of cases were sporadic, widespread outbreaks were observed very rarely; outbreaks mostly appeared in families (200 – 300/year). The most of the outbreaks were caused by poultry prepared with inadequate heat treatment or additionally contaminated food. There has not been any evidence in Hungary for outbreaks caused by ready-to-eat foods of industrial origin.

[In 1998 a single outbreak was investigated that occurred among consumers exposed to non-pasteurised milk (cow) consumed on a livestock market and exhibition (51 cases)]

75-80% of isolated strains were *C.jejuni*, around 10% were *C.coli*, 4-5% were *C.lari*, the distribution of campylobacter specieses did not changed significantly during the last five years.

Relevance as zoonotic disease

It is supposed that person-to-person transmission of campylobacter occur only in very few cases (infants, etc). Most of the outbreaks originated from poultry, via contaminated food. However, this facts have not based on statistical or laboratory evidences in Hungary.

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

There is an annual monitoring program based on the production capacity of the region. The monitoring plan is prepared by the central authority. The samples are taken by the regional authorities. Only one sample unit is taken from a batch, 25 grams are examined in the laboratory. These official samples are examined in the NRL Campylobacter with a presence-absence test followed by species identification and antimicrobial resistance.

At retail

To be reported via ECDC.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

Fresh meat

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

At least 500 grams of fresh meat is sampled in a sterile plastic bag. The sample is transported to the laboratory in a cool box by courier.

Definition of positive finding

At slaughterhouse and cutting plant

When a strain of thermophilic Campylobacter is isolated from the sample (25g) after enrichment.

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 10272:1995

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

Thermophilic Campylobacter - as in many countries - shows a high prevalence in broiler meat with a marked seasonal distribution of 30 % in winter to more than 60% in the summer months.

Table Campylobacter in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from bovine animals - fresh - at slaughterhouse	CAO FFSD	Single	25 gramms	138	3	1	2			
Meat from bovine animals - fresh - at processing plant	CAO FFSD	Single	25 gramms	156	1	0	1			
Meat from bovine animals - fresh - at retail	CAO FFSD	Single	25 gramms	70	0					
Meat from pig - fresh - at slaughterhouse	CAO FFSD	Single	25 gramms	142	7	4	3			
Meat from pig - fresh - at processing plant	CAO FFSD	Single	25 gramms	164	5	2	3			
Meat from pig - fresh - at retail	CAO FFSD	Single	25 gramms	46	2	0	1			1
Milk, cows' - raw	CAO FFSD	Single	50 ml	185	3		2			1
Meat from bovine animals - minced meat - intended to be eaten cooked - chilled - at retail - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	4	0					
Milk, goats' - raw	CAO FFSD	Single	50 ml	1	0					
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - chilled - at catering - Clinical investigations	CAO FFSD	Single	25 gramms	67	2		2			

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse	CAO FFSD	Single	25 grams	170	92	51	40	1		
Meat from broilers (Gallus gallus) - fresh - at processing plant	CAO FFSD	Single	25 grams	77	23	15	7			1
Meat from broilers (Gallus gallus) - fresh - at retail	CAO FFSD	Single	25 grams	30	13	7	6			
Meat from duck - at slaughterhouse	CAO FFSD	Single	25 grams	167	31	8	21			2
Meat from duck - at retail	CAO FFSD	Single	25 grams	36	9	3	6			
Meat from geese - at slaughterhouse	CAO FFSD	Single	25 grams	123	10	4	6			
Meat from geese - at retail	CAO FFSD	Single	25 grams	10	2	0	2			
Meat from turkey - fresh - at slaughterhouse	CAO FFSD	Single	25 grams	69	18	9	6			3
Meat from turkey - fresh - at processing plant	CAO FFSD	Single	25 grams	263	55	42	13			
Meat from turkey - fresh - at retail	CAO FFSD	Single	25 grams	68	15	10	5			

2.2.4 Campylobacter in animals

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cattle (bovine animals) - dairy cows	CAO-VDD	Animal	439	17	12	5			
Gallus gallus (fowl) - broilers - at slaughterhouse	CAO-VDD	Animal	439	292	154	113	1		24
Pigs	CAO-VDD	Animal	785	296	4	252			40
Sheep	CAO-VDD	Animal	2	2					2

2.2.5 Antimicrobial resistance in Campylobacter isolates

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

Sampling strategy used in monitoring

Frequency of the sampling

Isolates derive from monitoring system performed for measurement of prevalence of campylobacters in fresh poultry meat. The sampling is random , performed by the regional competent authorities. The samples are taken in slaughterhouses, and is a part of a permanent monitoring scheme.

Type of specimen taken

500 grams of fresh poultry meat.

Procedures for the selection of isolates for antimicrobial testing

Almost every isolated strains are tested.

Methods used for collecting data

All the tests are performed by the NRL.

Laboratory methodology used for identification of the microbial isolates

Disc diffusion method on horseblood agar plates. Control strains are used.

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

C. coli	Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
	41																										
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest		
Tetracyclines - Tetracycline	2	41	17						12	6	4	2			17												
Fluoroquinolones - Ciprofloxacin	1	41	34				4	2	1			1	33														
Quinolones - Nalidixic acid	32	41	34									1	3	1	1	1	33		1								
Aminoglycosides - Gentamicin	2	41	1					2	13	15	9	1		1													
Macrolides - Erythromycin	16	41	0				1			32	2	6															

Footnote:

Number of multiresistant isolates
fully sensitive5
resistant to 1 antimicrobial18
resistant to 2 antimicrobials16
resistant to 3 antimicrobials1
resistant to 4 antimicrobials1
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of C. jejuni in Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

C. jejuni	Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
	55																										
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest		
Tetracyclines - Tetracycline	2	55	25				1	1	15	6	5	2	1	3	20				1								
Fluoroquinolones - Ciprofloxacin	1	55	49				2	2	1	1		3	42		1	3											
Quinolones - Nalidixic acid	16	55	50									1	2	2		5	40		5								
Aminoglycosides - Gentamicin	1	55	0					20	15	17	3																
Macrolides - Erythromycin	4	55	0			1				51	2	1															

Footnote:

'Number of multiresistant isolates
fully sensitive3
resistant to 1 antimicrobial28
resistant to 2 antimicrobials18
resistant to 3 antimicrobials5
resistant to 4 antimicrobials1
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of C. jejuni in Cattle (bovine animals) - mixed herds - at farm - animal sample - Monitoring - quantitative data [Dilution method]

C. jejuni		Concentration (µg/ml), number of isolates with a concentration of inhibition equal to																											
		Cattle (bovine animals) - mixed herds - at farm - animal sample - Monitoring																											
		yes																											
		8																											
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest				
Tetracyclines - Tetracycline	2	8	2						5	1					2														
Fluoroquinolones - Ciprofloxacin	1	8	2				1	2	3				1			1													
Quinolones - Nalidixic acid	16	8	2									1	1	3	1		1		1										
Aminoglycosides - Gentamicin	1	8	0					1	4	3																			
Macrolides - Erythromycin	4	8	0			1				7																			

Footnote:

'Number of multiresistant isolates

fully sensitive4

resistant to 1 antimicrobial4

resistant to 2 antimicrobials

resistant to 3 antimicrobials

resistant to 4 antimicrobials

resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - mixed herds - at farm - animal sample - Monitoring - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to																											
C. coli	Cattle (bovine animals) - mixed herds - at farm - animal sample - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
	3																										
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest		
Tetracyclines - Tetracycline	2	3	2						1						2												
Fluoroquinolones - Ciprofloxacin	1	3	1				1	1					1														
Quinolones - Nalidixic acid	32	3	1										2				1										
Aminoglycosides - Gentamicin	2	3	0						2		1																
Macrolides - Erythromycin	16	3	1							2						1											

Footnote:

'Number of multiresistant isolates
fully sensitive1
resistant to 1 antimicrobial
resistant to 2 antimicrobials2
resistant to 3 antimicrobials
resistant to 4 antimicrobials
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of C. jejuni in Pigs - fattening pigs - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

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

Footnote:

'Number of multiresistant isolates
fully sensitive
resistant to 1 antimicrobial
resistant to 2 antimicrobials1
resistant to 3 antimicrobials
resistant to 4 antimicrobials
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of C. coli in Pigs - fattening pigs - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

C. coli	Pigs - fattening pigs - at slaughterhouse - animal sample - caecum - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
	114																									
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines - Tetracycline	2	112	98						7	2	3	2		7	86		3		2							
Fluoroquinolones - Ciprofloxacin	1	113	59			1	22	11	11	5	4	4	51	1		3										
Quinolones - Nalidixic acid	32	113	58									1	15	27	4	8	51		7							
Aminoglycosides - Gentamicin	2	113	2					14	20	29	36	12	1		1											
Macrolides - Erythromycin	16	114	17				1	1		68	12	11	2	1	1	16			1							

Footnote:

'Number of multiresistant isolates fully sensitive7
resistant to 1 antimicrobial15
resistant to 2 antimicrobials45
resistant to 3 antimicrobials39
resistant to 4 antimicrobials8
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of Campylobacter spp., unspecified in Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

Campylobacter spp., unspecified	Gallus gallus (fowl) - broilers - before slaughter - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
	9																										
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest		
Tetracyclines - Tetracycline	2	9	3			1			2	2	1				3												
Fluoroquinolones - Ciprofloxacin	1	9	7								2		7														
Quinolones - Nalidixic acid	32	9	8												1		8										
Aminoglycosides - Gentamicin	2	9	0					2	3	4																	
Macrolides - Erythromycin	16	9	0				1			8																	

Footnote:

'Number of multiresistant isolates
fully sensitive
resistant to 1 antimicrobial7
resistant to 2 antimicrobials2
resistant to 3 antimicrobials
resistant to 4 antimicrobials
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of Campylobacter spp., unspecified in Pigs - fattening pigs - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method]

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

Campylobacter spp., unspecified	Pigs - fattening pigs - at slaughterhouse - animal sample - caecum - Monitoring																									
	Isolates out of a monitoring program (yes/no) yes																									
	Number of isolates available in the laboratory 20																									
	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Antimicrobials:																										
Tetracyclines - Tetracycline	2	20	16				1		1	1			3	7		2		4								
Fluoroquinolones - Ciprofloxacin	1	20	6		1	2	4	2	4	1		3	2			1										
Quinolones - Nalidixic acid	32	20	9								1	1	1	5		3	2	2	5							
Aminoglycosides - Gentamicin	2	20	1		1			4	4	6	4		1													
Macrolides - Erythromycin	16	20	1					3	3	11	2								1							

Footnote:

'Number of multiresistant isolates
fully sensitive3
resistant to 1 antimicrobial5
resistant to 2 antimicrobials11
resistant to 3 antimicrobials1
resistant to 4 antimicrobials
resistant to >4 antimicrobials

Table Antimicrobial susceptibility testing of Campylobacter spp., unspecified in Quails - at farm - animal sample - Clinical investigations - quantitative data [Dilution method]

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

Campylobacter spp., unspecified	Quails - at farm - animal sample - Clinical investigations																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines - Tetracycline	2	1	1												1											
Fluoroquinolones - Ciprofloxacin	1	1	1													1										
Quinolones - Nalidixic acid	32	1	1																1							
Aminoglycosides - Gentamicin	2	1	0								1															
Macrolides - Erythromycin	16	1	0								1															

Footnote:

'Number of multiresistant isolates
fully sensitive
resistant to 1 antimicrobial
resistant to 2 antimicrobials
resistant to 3 antimicrobials
resistant to 4 antimicrobials1
resistant to >4 antimicrobials

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

Test Method Used		Standard methods used for testing		
Broth dilution		NCCLS/CLSI		

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Quinolones	Nalidixic acid		32	
Aminoglycosides	Gentamicin		2	
Macrolides	Erythromycin		16	
Penicillins	Ampicillin		16	

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

Test Method Used		Standard methods used for testing		
Broth dilution		NCCLS/CLSI		

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Quinolones	Nalidixic acid		32	
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Macrolides	Erythromycin		16	

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing
Broth dilution	NCCLS/CLSI

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

Test Method Used	Standard methods used for testing

Tetracyclines	Tetracycline		2	
Fluoroquinolones	Ciprofloxacin		1	
Aminoglycosides	Gentamicin		1	
	Streptomycin		2	
Macrolides	Erythromycin		4	

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

Test Method Used	Standard methods used for testing

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

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

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

Testing of ready-to-eat products for the presence/and/or the determination of the number of *Listeria monocytogenes* is obligatory for food business operators based on Reg.2073/2005/EC. The official monitoring program concentrates to take samples from these products on a risk based approach as well. Only the data of official control are presented in this report, because only these data are collected in the database of the authority. The legislative background has changed a lot, because before 2006 only milk and milk products were regularly tested for *Listeria monocytogenes* and only by presence absence tests. In the frame of USDA-FSIS monitoring obligatory for US exporting establishments raw cured products were tested as well with presence-absence tests and MPN based method suitable for enumeration of low numbers of the microorganism

From 2006, those RTE products that not support the growth of *Listeria*, are examined by the enumeration method ISO 11290:2 (e.g.salami, raw smoked ham). If the product is able to support the growth of the pathogen, presence-absence test is used as a first step (ISO 11290:1), or the two method run paralel (depending on the expiry date, the amount of sample is enough to perform an enumeration test if the first test is positive). The pathogen is enumerated from all the positive samples.

Based on the past decade's USDA *Listeria* monitoring data, *Listeria monocytogenes* can be frequently isolated from traditional raw and smoked meat products as salami and sausages, but the highest contamination level was 2.3 cells (MPN method)/gram. Therefore this product group certainly does not play an important role in human infections.

Listeria monocytogenes can be isolated from mixes salads as well, but because of low pH and preservatives charateristic for this product group generally do not support the growth of the pathogen, and only level of <10 cells per gram was measured from the positive samples.

Milk products are characteristically made of pasteurised milk in Hungary, therefore these types of foodstuff are practically free from *Listeria*.

Consumers show an increasing interest to by raw milk for consumption in the past few years. Despite of the obligatory labelling to call the consumers' attention for heat treating of raw milk, this product can be considered as a potential source of infection in the future.

Recent actions taken to control the zoonoses

Based on Reg. 2073/2005/EC.

2.3.2 Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic reporting system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection amid the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: Clinical picture of an invasive illness (meningitis purulenta, sepsis, stillbirth etc.), and *L.monocytogenes* has been isolated from invasive sample (liquor, blood, amniotic fluid etc.)

Diagnostic/analytical methods used

The samples are cultivated on enriched medium. The isolation is followed by the biochemical tests, and antimicrobial susceptibility testing.

Notification system in place

Listeriosis has been notifiable since 1998 in Hungary. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS. Hungary also has a laboratory based surveillance system, and the NPHMOS has representative dataset from most of the microbiological laboratories about the investigated cases (since 2003 antibiotic resistances has also been reported from 20 county institutes and 12 laboratories from universities or hospitals).

The illness is reported first as meningitis purulenta syndrome on the basis of the symptoms. Having the results of the laboratory tests this syndrome-based diagnose is modified to etiology-based diagnose (listeriosis).

History of the disease and/or infection in the country

Listeriosis has been notifiable since 1998 in Hungary, there have been 91 cases registered since then. The number of yearly registered cases ranged between 4 – 25 (incidence 0,04 – 0,2/100 000 inhabitants/year; median: 14 cases), the case fatality rate ranged between 0 – 50% (median 22,2%). The age-distribution of cases: 12% infants, 1 – 14 year 3,4%, 15 – 19 year 0%, 20 – 49 year 20%, 50 – 59 year 20%, > 60 year 43%. Most of the cases are meningitis, less of them are sepsis.

Relevance as zoonotic disease

Listeriosis is underreported in Hungary. No evidence has been found for a food-borne case based on laboratory tests in Hungary.

2.3.3 Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant	CAO FFSD	Single	25 grams	1	0			1		
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail	CAO FFSD	Single	25 grams	2	0			2		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant				112	0	76		36		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail				104	0	32		72		
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant				2	0	0		2		
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant				13	0	12		1		
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at retail				2	0	1		1		
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at processing plant				32	0	31		1		
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at retail				44	2	31	1	13	1	

Table *Listeria monocytogenes* in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for <i>L. monocytogenes</i>	Units tested with detection method	<i>Listeria monocytogenes</i> presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	<i>L. monocytogenes</i> > 100 cfu/g
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant				2	0	2				
Dairy products (excluding cheeses) - butter - at processing plant	CAO FFSD	Single	25 gramms	34	0	30	0	4		
Dairy products (excluding cheeses) - butter - at retail	CAO FFSD	Single	25 gramms	83	2	77	2	6	0	
Dairy products (excluding cheeses) - cream - at processing plant	CAO FFSD	Single	25 gramms	1	0	1				
Dairy products (excluding cheeses) - cream - at retail	CAO FFSD	Single	25 gramms	1	0	1				
Milk, cows' - pasteurised milk - at processing plant	CAO FFSD	Single	25 ml	6	0	6				
Milk, cows' - pasteurised milk - at retail	CAO FFSD	Single	25 ml	4	0	4				
Milk, cows' - raw - intended for direct human consumption	CAO FFSD	Single	CAO FFSD	195	5	195	5			
Cheeses made from cows' milk - unspecified - made from pasteurised milk - unspecified - Monitoring - official sampling	CAO FFSD	Single	25 gramms	9	0	9	0			
Dairy products (excluding cheeses) - dairy desserts - chilled - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 gramms	25	0	25	0			
Dairy products (excluding cheeses) - dairy desserts - chilled - at retail - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	88	0	88	0			

Table *Listeria monocytogenes* in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for <i>L. monocytogenes</i>	Units tested with detection method	<i>Listeria monocytogenes</i> presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	<i>L. monocytogenes</i> > 100 cfu/g
Dairy products (excluding cheeses) - fermented dairy products - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 gramms	114	0	103	0	11		
Dairy products (excluding cheeses) - fermented dairy products - at retail - Monitoring - official sampling	CAO FFSD	Single	25 gramms	112	0	101	0	11		
Dairy products (excluding cheeses) - ice-cream - made from pasteurised milk - at processing plant - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	135	0	135	0			
Dairy products (excluding cheeses) - ice-cream - made from pasteurised milk - at retail - Monitoring - official sampling	CAO FFSD	Single	25 gramms	108	0	108	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Monitoring	CAO FFSD	Single	25 gramms	20	0	20	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at retail - Monitoring - official sampling	CAO FFSD	Single	25 gramms	33	0	33	0			

Table *Listeria monocytogenes* in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for <i>L. monocytogenes</i>	Units tested with detection method	<i>Listeria monocytogenes</i> presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	<i>L. monocytogenes</i> > 100 cfu/g
Fish - smoked - at processing plant	CAO FFSD	Single	25 gramms	2	0	2	0			
Fish - smoked - at retail	CAO FFSD	Single	25 gramms	62	6	62	6			
Foodstuffs intended for special nutritional uses	CAO FFSD	Single	25 gramms	37	0	22	0	15	0	0
Infant formula	CAO FFSD	Single	25 gramms	179	0	153	0	26	0	0
Meat from bovine animals - fresh	CAO FFSD	Single	25 gramms	2	0	2	0			
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant	CAO FFSD	Single	25 gramms	5	0	5	0			
Meat from bovine animals - meat products - cooked, ready-to-eat - at retail	CAO FFSD	Single	25 gramms	13	3	10	3	3		
Meat from broilers (<i>Gallus gallus</i>) - fresh	CAO FFSD	Single	25 gramms	9	0	4	0	5		
Meat from broilers (<i>Gallus gallus</i>) - meat products - cooked, ready-to-eat - at processing plant	CAO FFSD	Single	25 gramms	113	9	80	6	33	3	0
Meat from broilers (<i>Gallus gallus</i>) - meat products - cooked, ready-to-eat - at retail	CAO FFSD	Single	25 gramms	221	12	188	11	33	0	1
Meat from pig - fresh	CAO FFSD	Single	25 gramms	214	0	214				
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	CAO FFSD	Single	25 gramms	150	21	107	14	43	7	0
Meat from pig - meat products - cooked, ready-to-eat - at retail	CAO FFSD	Single	25 gramms	158	5	125	4	33	0	1
Molluscan shellfish - cooked - at processing plant	CAO FFSD	Single	25 gramms	1	0	1	0			

Table *Listeria monocytogenes* in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for <i>L. monocytogenes</i>	Units tested with detection method	<i>Listeria monocytogenes</i> presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	<i>L. monocytogenes</i> > 100 cfu/g
Molluscan shellfish - cooked - at retail	CAO FFSD	Single	25 grams	106	1	81	1	25	0	0
Chocolate - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	4	0	1	0	3	0	0
Cocoa and cocoa preparations, coffee and tea - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	10	0	5	0	5	0	0
Cocoa and cocoa preparations, coffee and tea - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	147	1	62	1	85	0	0
Confectionery products and pastes - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	68	1	60	1	8	0	0
Confectionery products and pastes - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	252	4	223	3	29	0	1
Meat from turkey - fresh - unspecified - Monitoring - official sampling	CAO FFSD	Single	25 grams	6	0	4	0	2	0	0
Meat from turkey - meat products - cooked, ready-to-eat - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	225	4	218	2	7	0	2
Meat from turkey - meat products - cooked, ready-to-eat - chilled - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	89	2	77	2	12	0	0
Other processed food products and prepared dishes - sandwiches - with meat - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	45	3	35	3	10	0	0
Other processed food products and prepared dishes - sandwiches - with meat - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	238	1	195	1	43	0	0

Table *Listeria monocytogenes* in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for <i>L. monocytogenes</i>	Units tested with detection method	<i>Listeria monocytogenes</i> presence in x g	Units tested with enumeration method	> detection limit but ≤ 100 cfu/g	<i>L. monocytogenes</i> > 100 cfu/g
Ready-to-eat salads - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	45	5	37	4	8	1	0
Ready-to-eat salads - at retail - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 grams	398	18	299	15	99	1	2
Seeds, sprouted - ready-to-eat - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	3	0	3	0			
Seeds, sprouted - ready-to-eat - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	89	0	71	0	18	0	0
Vegetables - pre-cut - ready-to-eat - at processing plant - Monitoring - official sampling	CAO FFSD	Single	25 grams	4	0	4	0			
Vegetables - pre-cut - ready-to-eat - at retail - Monitoring - official sampling	CAO FFSD	Single	25 grams	176	2	141	2	35	0	0

2.3.4 Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	CAO-VDD	Animal	1	1	1	
Gallus gallus (fowl)	CAO-VDD	Animal	1	1	1	
Goats	CAO-VDD	Animal	1	1	1	
Sheep	CAO-VDD	Animal	12	12	11	1

2.4 E. COLI INFECTIONS

2.4.1 General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

Additional information

E. coli- microbiological examination of food according to ISO 16654 (E. coli O157)
identification by antisera

2.4.2 Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from bovine animals - fresh - at slaughterhouse	CAO FFSD	Single	25 gramms	118	0	0		
Meat from bovine animals - fresh - at processing plant	CAO FFSD	Single	25 gramms	161	0	0		
Meat from bovine animals - fresh - at retail	CAO FFSD	Single	25 gramms	81	0	0		
Milk, cows' - raw	CAO FFSD	Single	50ml	119	0	0		
Meat from bovine animals - minced meat - intended to be eaten cooked - chilled - at processing plant - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	40	0	0		
Meat from bovine animals - minced meat - intended to be eaten cooked - chilled - at retail - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	77	0	0		
Milk, cows' - pasteurised milk - at retail - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	50ml	1	0	0		
Other processed food products and prepared dishes - unspecified - non-ready-to-eat foods - frozen - at processing plant - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	6	0	0		

Table VT E. coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Other processed food products and prepared dishes - unspecified - non-ready-to-eat foods - frozen - at retail - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	54	0	0		
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - chilled - at catering - Clinical investigations	CAO FFSD	Single	25 gramms	1	0	0		
Other processed food products and prepared dishes - unspecified - ready-to-eat foods - chilled - at retail - domestic production - Monitoring - official sampling - objective sampling	CAO FFSD	Single	25 gramms	4	0	0		

2.4.3 Escherichia coli, pathogenic in animals

A. Verotoxigenic Escherichia coli in cattle (bovine animals)

Monitoring system

Sampling strategy

Monitoring, Official sampling, objective sampling

Frequency of the sampling

Animals at farm

Sampling distributed evenly throughout the year

Animals at slaughter (herd based approach)

Sampling distributed evenly throughout the year

Type of specimen taken

Animals at slaughter (herd based approach)

meat, minced meat

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

500 gram meat sample is taken (from one animal), the weight of test portion is 25 grams (cutted from the surface of meat).

The samples are examined by ISO 16654:2001 Standard. Immuno-magnetic concentration is used for the detection of the most important serotype O157. If a strain belonging to the O 157 serotype is isolated, the toxin production is detected by a latex based agglutination test.

Case definition

Animals at slaughter (herd based approach)

The sample is considered to be positive if E. coli O157 was isolated, and the strain produces verotoxin (VT-1, VT-2 or both)

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

Bacteriological method: ISO 16654:2001

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Cats	CAO-VDD	Animal		1	1			1
Cattle (bovine animals)	CAO-VDD	Animal		4037	839			839
Dogs	CAO-VDD	Animal		52	47			47
Goats - at farm	CAO-VDD	Animal		13	10			10
Pigs	CAO-VDD	Animal		1447	104			104
Poultry, unspecified	CAO-VDD	Animal		26494	1028			1028
Sheep - at farm	CAO-VDD	Animal		55	40			40
Solipeds, domestic	CAO-VDD	Animal		5	3			3
Pheasants - at farm - Survey	CAO-VDD	Animal		609	157			157
Pigeons - unspecified - Survey	CAO-VDD	Animal		23	19			19
Pigs - mixed herds - unspecified - Survey	CAO-VDD	Animal		1447	0			0
Wild boars - wild - unspecified - Survey	CAO-VDD	Animal		16	13			13
Wild ducks - unspecified - Survey	CAO-VDD	Animal		20	5			5

2.4.4 Antimicrobial resistance in Escherichia coli, pathogenic isolates

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Cattle (bovine animals) - at farm - animal sample - Clinical investigations																											
	no																											
	223																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		223	0	19	1	1	1			3	1	2				2	1	4	7	23	25	32	27	35	14	9		
Amphenicols - Florfenicol		221	0	6	1									1			2	9	11	31	31	41	20	28	7	16		
Tetracyclines - Tetracycline		214	0	39	3	7		3				1		1	1	6	10	27	29	36	17	17	11	4		1		
Fluoroquinolones - Enrofloxacin		217	0	7	2		1		1			1					1	1		1	7	5	9	16	18	31		
Quinolones - Nalidixic acid		56	0	15	1	2	1	1								1	4		3	8	7	6	3	1	1	2		
Sulphonamides - Sulfonamide		55	0	30	1								1		1	1	1	2	2	3	1	2	2	2	3	1		
Aminoglycosides - Streptomycin		216	0	36	1	2	6	2	7	1	5	2	25	30	26	31	22	9	3	5			1	1				
Aminoglycosides - Gentamicin		211	0	15		3		2		3			2	3	9	21	33	44	31	24	7	7	4	3				
Penicillins - Ampicillin		223	0	58	1	8		1	3	4	9	3	3		35	28	23	23	10	10	4							
Cephalosporins - Cefotaxim		207	0	1				1	1					1			1			1	2	3	4	4	1	67		
Cephalosporins - Ceftazidim		214	0									1						2		2	20	25	32	31	14	41		
Cephalosporins - Ceftiofur		104	0	1				1	1					1				1	8	14	15	15	19	16	4	5		

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Cattle (bovine animals) - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - at farm - animal sample - Clinical investigations						
	no						
	223						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	4	8	2	1			1
Amphenicols - Florfenicol	3	10	1	2		1	
Tetracyclines - Tetracycline	1						
Fluoroquinolones - Enrofloxacin	19	33	14	19	7	16	8
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide	1		1				
Aminoglycosides - Streptomycin						1	
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	20	35	12	25	7	13	8
Cephalosporins - Ceftazidim	13	17	6	5	2	2	1
Cephalosporins - Ceftiofur	1	2					

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pigs - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Pigs - mixed herds - at farm - animal sample - Clinical investigations																											
	no																											
	122																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		119	0	15	1	6	4	3	1	2		1						3		11	6	14	10	16	6	8		
Amphenicols - Florfenicol		120	0	12	1	2						1					3	6	5	13	10	15	8	17	6	11		
Tetracyclines - Tetracycline		113	0	83	2	6	3	1	3			1						3	3	3	1	2	2					
Fluoroquinolones - Enrofloxacin		123	0	5		1	2	2	1	2		2		1	1		2	2	2		18	5	3	7	3	6		
Quinolones - Nalidixic acid		118	0	29	2	1	1	2	1	1	2	1					7	5	9	11	9	17	7	7	5			
Sulphonamides - Sulfonamide		111	0	69				1							3	2	2	4	2	3	4	4	2	2		5		
Aminoglycosides - Streptomycin		116	0	35	1	7	2	13	13	1	1		15	8	6	5	6			2		1						
Aminoglycosides - Gentamicin		120	0	1			2	3		5		2	6	2	6	7	12	30	13	13	6	9	1	1				
Penicillins - Ampicillin		116	0	63				3	1	2	1	1	4		9	7	8	5	7	4		1						
Cephalosporins - Cefotaxim		119	0			1			2						1								1	3	1	31		
Cephalosporins - Ceftazidim		122	0											1			1		2	2	8	8	16	18	6	21		
Cephalosporins - Ceftiofur		121	0	2					1						2	1		1	8	14	15	16	21	17	13	3		

E.coli, pathogenic, unspecified	Pigs - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	122						
Antimicrobials:	29	30	31	32	33	34	≥35
Amphenicols - Chloramphenicol	2	6	2	1			1

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pigs - mixed herds - at farm - animal sample - Clinical investigations
- quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	122						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol	2	5	1	1			1
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	8	16	5	19	5	2	3
Quinolones - Nalidixic acid		1					
Sulphonamides - Sulfonamide	1	4		2	1		
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin	1						
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	8	30	9	13	4	9	6
Cephalosporins - Ceftazidim	8	19	6	2	2	2	
Cephalosporins - Ceftiofur	3	2		1		1	

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - mixed flocks/holdings - at farm - animal sample
- Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Gallus gallus (fowl) - mixed flocks/holdings - at farm - animal sample - Clinical investigations																											
	no																											
	228																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		222	0	18	1	1		2	1	1				1		1	1	2	2	11	10	26	26	50	18	27		
Amphenicols - Florfenicol		217	0	7													4	4	4	13	13	41	34	28	9	33		
Tetracyclines - Tetracycline		218	0	62	2	3	3	1					1		2	6	6	24	21	35	27	17	4	3	1			
Fluoroquinolones - Enrofloxacin		224	0	5	1	7		4	5	7	3		2	1		1		5	1	3	24	15	13	12	8	7		
Quinolones - Nalidixic acid		223	0	77	1	5	6	10	8	4	2						2	3		8	7	16	28	21	7	9		
Sulphonamides - Sulfonamide		226	0	67	1			2		2		1	3		4	8	5	12	12	30	7	9	19	17	3	5		
Aminoglycosides - Streptomycin		223	0	20	1	2	3	10	7		3	1	15	20	26	30	33	26	15	6	4	1						
Aminoglycosides - Gentamicin		222	0	1			1			1			3	2	4	11	7	25	24	44	34	40	16	7	1	1		
Penicillins - Ampicillin		226	0	97							3	1			9	15	21	21	17	21	10	5	3	2	1			
Cephalosporins - Cefotaxim		217	0					1		2				6	5	4	5	2	3	11	2		1	1		15		
Cephalosporins - Ceftazidim		228	0							1	1	3	9	14	5	5	5	3	2	2	2	5	8	12	11	25		
Cephalosporins - Ceftiofur		225	0				1	1		1	1	2	5	5	14	2	4		8	5	3	16	19	23	18	36		

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	228						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	4	14	1	4			

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - mixed flocks/holdings - at farm - animal sample
- Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	228						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol	5	11	3	6		2	
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	4	11	8	23	8	18	28
Quinolones - Nalidixic acid	1	5		2	1		
Sulphonamides - Sulfonamide	2	8	1	2	1	2	3
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	3	30	8	37	15	25	41
Cephalosporins - Ceftazidim	14	29	14	32	8	14	4
Cephalosporins - Ceftiofur	14	28	7	11		1	

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Turkeys - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Turkeys - mixed flocks/holdings - at farm - animal sample - Clinical investigations																											
	no																											
	198																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		195	0	33		7	6	5	6	8	1	2		2		2	2	1	1	11	9	17	19	27	11	12		
Amphenicols - Florfenicol		198	0	22		3		1		1	2						7	7	8	17	10	26	16	30	11	18		
Tetracyclines - Tetracycline		171	0	110	2	1	5	5	2		2		2	2		2	1	8	8	12	4	5						
Fluoroquinolones - Enrofloxacin		196	0	6		1	3	2	1	4	3	3		9	2	3	2	4	3	1	27	15	11	8	2	11		
Quinolones - Nalidixic acid		187	0	75	1	3	2	6	5	2	4							1	3	7	9	14	21	12	10	8		
Sulphonamides - Sulfonamide		187	0	88	1				1	3		2	1		9	9	4	15	6	14	5	11	4	7		2		
Aminoglycosides - Streptomycin		187	0	43	2	7	4	6	1	1	3	3	14	15	28	24	12	14	3	1	2	1	1	2				
Aminoglycosides - Gentamicin		187	0							1			1	2	3	7	11	26	30	36	25	21	11	10	1	2		
Penicillins - Ampicillin		171	0	95	1										14	7	8	18	14	7	5	2						
Cephalosporins - Cefotaxim		194	0													2		1	4	3	8	1	3		3	7		
Cephalosporins - Ceftazidim		194	0										2	2	4	7	4	1			3		6	9	12	23		
Cephalosporins - Ceftiofur		195	0								1			1	2	1	2		7	9	11	12	15	25	31	27		

E.coli, pathogenic, unspecified	Turkeys - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	198						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	2	8	1	2			

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Turkeys - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	198						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		14	1	2		1	1
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1	7	5	16	5	18	23
Quinolones - Nalidixic acid	2	1	1				
Sulphonamides - Sulfonamide		3				1	1
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	8	27	11	26	11	31	48
Cephalosporins - Ceftazidim	13	37	10	27	10	13	11
Cephalosporins - Ceftiofur	15	25	4	7			

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Ducks - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Ducks - mixed flocks/holdings - at farm - animal sample - Clinical investigations																											
	no																											
	88																											
Antimicrobials:	Cut-off value	N	n	≤6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		87	0	5			1											1	1	2	5	14	10	10	11	15		
Amphenicols - Florfenicol		88	0	2	1					1							2	2	1	5	5	12	6	16	5	17		
Tetracyclines - Tetracycline		87	0	37	1	2			2							2	2	5	3	12	10	5	3	3				
Fluoroquinolones - Enrofloxacin		88	0	2		1	1							1			1			1	3	2	2	4	6	4		
Quinolones - Nalidixic acid		87	0	15		3	1	1			1						2			4	4	8	9	13	8	9		
Sulphonamides - Sulfonamide		86	0	31								1	1		1	1	1	10	4	14	5	3	4	2	1	2		
Aminoglycosides - Streptomycin		88	0	19	1		2	3	6				3	5	9	13	7	18	1	1								
Aminoglycosides - Gentamicin		87	0											1	3	3	1	14	9	18	17	15	5		1			
Penicillins - Ampicillin		88	0	29			1	1	1		1			1	2	6	5	12	8	12	5	4						
Cephalosporins - Cefotaxim		87	0												2													9
Cephalosporins - Ceftazidim		88	0									1	1									3		4	6	7		
Cephalosporins - Ceftiofur		87	0											1	1		1		2		2	3	6	9	7	17		

E.coli, pathogenic, unspecified	Ducks - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	88						
Antimicrobials:	29	30	31	32	33	34	≥35
Amphenicols - Chloramphenicol	4	6	1	1			

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Ducks - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Ducks - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	88						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol	3	8		1		1	
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	3	6		8	6	18	19
Quinolones - Nalidixic acid	4	4	1				
Sulphonamides - Sulfonamide	1	3		1			
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	2	5	3	17	6	21	22
Cephalosporins - Ceftazidim	3	20	7	15	8	9	4
Cephalosporins - Ceftiofur	9	23		5		1	

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - at farm - animal sample - Clinical investigations																											
	no																											
	32																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		31	0	1					1	1						1	1	1	3	6	8	4	3	1				
Amphenicols - Florfenicol		31	0														3	1	3	7	5	4	1	5	1	1		
Tetracyclines - Tetracycline		30	0	10		1	1	1								2	3	5	2	3	1	1						
Fluoroquinolones - Enrofloxacin		33	0	3		1			1	1				1		2	2	2			2	1	2	3	1	2		
Quinolones - Nalidixic acid		30	0	10							1		1				2	2	3	2	3	4		2				
Sulphonamides - Sulfonamide		32	0	11					2				1		2	3	3	1	2	3	2	1			1			
Aminoglycosides - Streptomycin		30	0			2			1		1		8	8	2	4	2	1			1							
Aminoglycosides - Gentamicin		31	0	1						1			2	2	4	8	5	4	3	1								
Penicillins - Ampicillin		30	0	9									1		5	5	3	2	3		1	1						
Cephalosporins - Cefotaxim		30	0									1				2	2				1	2		1		11		
Cephalosporins - Ceftazidim		32	0				1						3				1	1		4	3	5	7	4	3			
Cephalosporins - Ceftiofur		31	0									1	1	2	2				5	5	7	3	3	1	1			

E.coli, pathogenic, unspecified	Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - at farm - animal sample - Clinical investigations						
	no						
	32						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - at farm - animal sample - Clinical investigations						
	no						
	32						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1	6	1				1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	3	2	1	2	1	1	
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Clinical investigations																											
	no																											
	32																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		31	0	1					1	1						1	1	1	3	6	8	4	3				1	
Amphenicols - Florfenicol		31	0														3	1	3	7	5	4	1	4	2	1		
Tetracyclines - Tetracycline		31	0	9		1	1	1								2	3	5	2	3	2	2						
Fluoroquinolones - Enrofloxacin		31	0	3		1			1	1				1		2	2	2			2	1	2	3	1	1		
Quinolones - Nalidixic acid		31	0	10							1		1				2	2	3	1	3	4	4					
Sulphonamides - Sulfonamide		31	0	10					2				1		2	3	3	1	2	3	2	1			1			
Aminoglycosides - Streptomycin		30	0			2			1		1		8	8	2	3	2		2	1								
Aminoglycosides - Gentamicin		30	0	1						1			2	2	4	8	5	4	2	1								
Penicillins - Ampicillin		30	0	9									1		5	5	3	2	2		1	1	1					
Cephalosporins - Cefotaxim		30	0									1				2	2				1	2		2			11	
Cephalosporins - Ceftazidim		32	0				1						3				1	1		4	3	5	7	4	2			
Cephalosporins - Ceftiofur		31	0									1	1	2	2				5	5	7	3	3	1	1			

E.coli, pathogenic, unspecified	Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Clinical investigations						
	no						
	32						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - during rearing period - at farm - animal sample - Clinical investigations						
	no						
	32						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1	6	1				
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	3	2	2	1		1	
Cephalosporins - Ceftazidim		1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Geese - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Geese - mixed flocks/holdings - at farm - animal sample - Clinical investigations																											
	no																											
	94																											
Antimicrobials:	Cut-off value	N	n	≤6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		89	0	17		1	2	2	1	1		1				1	2	2	2	1	3	7	9	15	9	1		
Amphenicols - Florfenicol		91	0	6	1	1											1	4	1	4	5	10	7	18	3	15		
Tetracyclines - Tetracycline		92	0	48	1	2	1	1								1	2	5	7	10	5	2	1	3	2			
Fluoroquinolones - Enrofloxacin		89	0	12		3	4	4	1		2	2	2	2				1		1	9	1	4	3		5		
Quinolones - Nalidixic acid		94	0	39		4	3	2		1	1				1		1	1		3	5	6	6	6	3	9		
Sulphonamides - Sulfonamide		94	0	53	1	1				1						2	2	6	1	7	3	4		3	2	3		
Aminoglycosides - Streptomycin		93	0	29	2	1	1	2	5			3	4	8	3	13	8	10	2	2								
Aminoglycosides - Gentamicin		94	0				1							1		3	6	14	9	23	15	19	1	2				
Penicillins - Ampicillin		94	0	62			1				1				1	3	4	7	8	5	2							
Cephalosporins - Cefotaxim		94	0																		1				1	3		
Cephalosporins - Ceftazidim		94	0															1		1	1	1	2	6	6	11		
Cephalosporins - Ceftiofur		94	0												1					1	4	3	7	24	9	23		

E.coli, pathogenic, unspecified	Geese - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	94						
Antimicrobials:	29	30	31	32	33	34	≥35
Amphenicols - Chloramphenicol		8		3		1	

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Geese - mixed flocks/holdings - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Geese - mixed flocks/holdings - at farm - animal sample - Clinical investigations						
	no						
	94						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol	1	8		1	2	3	
Tetracyclines - Tetracycline	1						
Fluoroquinolones - Enrofloxacin	3	5	2	10	2	3	8
Quinolones - Nalidixic acid		2				1	
Sulphonamides - Sulfonamide	1	1		2		1	
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	4	14	9	16	7	11	28
Cephalosporins - Ceftazidim	9	27	7	11	6	5	
Cephalosporins - Ceftiofur	3	14	1	3	1		

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Dogs - pet animals - in total - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Dogs - pet animals - in total - Clinical investigations																											
	no																											
	33																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		32	0	5			1											2		1	4	6	4	5	1			
Amphenicols - Florfenicol		33	0	1													1	1	2	9	2	6	3	3		4		
Tetracyclines - Tetracycline		33	0	14	2	1									1	3				4	3	2	2			1		
Fluoroquinolones - Enrofloxacin		32	0	4				2		1		1									3	1		2	1	4		
Quinolones - Nalidixic acid		33	0	9				1						1			1	1	1	2	3	4	5	4		1		
Sulphonamides - Sulfonamide		33	0	12													1	1	1	3	3	1	3	1	2	3		
Aminoglycosides - Streptomycin		33	0	8			1	1	2	2	3	1	7	1	4	1		1				1						
Aminoglycosides - Gentamicin		32	0	1		1							2	1	1	5	5	7	3	2	1	2	1					
Penicillins - Ampicillin		33	0	18				1		1		1	1		2	3		4	1	1								
Cephalosporins - Cefotaxim		33	0																					2	3	10		
Cephalosporins - Ceftazidim		33	0																	1	6	2	5	8	3	1		
Cephalosporins - Ceftiofur		33	0																4	10	5	4	3	2	1	2		

E.coli, pathogenic, unspecified	Dogs - pet animals - in total - Clinical investigations						
	no						
	33						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol	1	1		1			

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Dogs - pet animals - in total - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Dogs - pet animals - in total - Clinical investigations						
	no						
	33						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1	4	1	5		1	1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide		2					
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	6	4	2	3	1		2
Cephalosporins - Ceftazidim	1	3	1	1		1	
Cephalosporins - Ceftiofur		2					

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Sheep - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Sheep - mixed herds - at farm - animal sample - Clinical investigations																											
	no																											
	19																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		19	0														1		1	5	1	4		2	1	2		
Amphenicols - Florfenicol		19	0											1			3	1	1			4	2	4		2		
Tetracyclines - Tetracycline		19	0	6		1	2	1								2		1	2	2	1					1		
Fluoroquinolones - Enrofloxacin		19	0																		2	2	2	1	1	5		
Quinolones - Nalidixic acid		19	0														1	3	3	1	6	2	1	1	1			
Sulphonamides - Sulfonamide		19	0	6		1									2	1		1	1	1		1		2	1	2		
Aminoglycosides - Streptomycin		19	0	3				2	2				1	3	5	1	2											
Aminoglycosides - Gentamicin		19	0										1	1	2	3	1	2	3	4				1	1			
Penicillins - Ampicillin		19	0	5						1			2	1	5		3	1		1								
Cephalosporins - Cefotaxim		19	0																		1				1	5		
Cephalosporins - Ceftazidim		19	0																		5	4		3	1	4		
Cephalosporins - Ceftiofur		19	0											1					2	4	3	2	2	3		1		

E.coli, pathogenic, unspecified	Sheep - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	19						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol	1	1					

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Sheep - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Sheep - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	19						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol				1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		2	1	1	1	1	
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1	5	2	1		2	1
Cephalosporins - Ceftazidim		1	1				
Cephalosporins - Ceftiofur	1						

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pheasants - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Pheasants - at farm - animal sample - Clinical investigations																											
	no																											
	11																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		11	0	4					1											1	3	1	1					
Amphenicols - Florfenicol		11	0	1														1	1	2	3	1	1	1				
Tetracyclines - Tetracycline		11	0	6		1													1	2	1							
Fluoroquinolones - Enrofloxacin		11	0				2	1		1							3				1				3			
Quinolones - Nalidixic acid		11	0	7							1									3								
Sulphonamides - Sulfonamide		11	0	7											2		1			1								
Aminoglycosides - Streptomycin		11	0	3				1					2	2	1		1	1										
Aminoglycosides - Gentamicin		11	0										1				5	1	2	1	1							
Penicillins - Ampicillin		11	0	5											2	2	1	1										
Cephalosporins - Cefotaxim		11	0																						1	7		
Cephalosporins - Ceftazidim		11	0																		3	2	3	1				
Cephalosporins - Ceftiofur		11	0																3	3	2		1	2				

E.coli, pathogenic, unspecified	Pheasants - at farm - animal sample - Clinical investigations						
	no						
	11						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pheasants - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pheasants - at farm - animal sample - Clinical investigations						
	no						
	11						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin							
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1	1	1				
Cephalosporins - Ceftazidim	1	1					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pigeons - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Pigeons - at farm - animal sample - Clinical investigations																											
		no																											
		11																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		11	0															1		1		2	2	1	3	1			
Amphenicols - Florfenicol		11	0																	1	1	3	3	2		1			
Tetracyclines - Tetracycline		11	0	8														1		2									
Fluoroquinolones - Enrofloxacin		11	0		1									1		1	1					1	1		1	2			
Quinolones - Nalidixic acid		11	0	5					1													3	1		1				
Sulphonamides - Sulfonamide		11	0	5											1			1	1			1	1			1			
Aminoglycosides - Streptomycin		11	0	4			1			1	1		2	1		1													
Aminoglycosides - Gentamicin		11	0												1		3	1		6									
Penicillins - Ampicillin		11	0	4					1		1	1		1	1	1		1											
Cephalosporins - Cefotaxim		11	0																				1	1		1			
Cephalosporins - Ceftazidim		10	0																	1			2	2	1	2			
Cephalosporins - Ceftiofur		11	0																1		3	3	2	2					

E.coli, pathogenic, unspecified	Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigeons - at farm - animal sample - Clinical investigations						
		no						
		11						
Antimicrobials:		29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol								

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Pigeons - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigeons - at farm - animal sample - Clinical investigations						
	no						
	11						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin					1		1
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	1	3	2	1			1
Cephalosporins - Ceftazidim		2					
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Goats - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, pathogenic, unspecified	Goats - mixed herds - at farm - animal sample - Clinical investigations																											
	no																											
	8																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:																												
Amphenicols - Chloramphenicol		8	0																	3	1	2	1				1	
Amphenicols - Florfenicol		8	0															2	1	1		2		2				
Tetracyclines - Tetracycline		8	0	2													1	2		2	1							
Fluoroquinolones - Enrofloxacin		8	0								1												1		1		2	
Quinolones - Nalidixic acid		8	0	1															2	2	3							
Sulphonamides - Sulfonamide		8	0							1					2	1			1	1	1						1	
Aminoglycosides - Streptomycin		8	0							2				2	1	1	2											
Aminoglycosides - Gentamicin		8	0													2	2	1	2	1								
Penicillins - Ampicillin		8	0	2									1		4		1											
Cephalosporins - Cefotaxim		8	0																								6	
Cephalosporins - Ceftazidim		8	0																			3	1	2			2	
Cephalosporins - Ceftiofur		8	0																1		1	4	2					

E.coli, pathogenic, unspecified	Goats - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	8						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Goats - mixed herds - at farm - animal sample - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Goats - mixed herds - at farm - animal sample - Clinical investigations						
	no						
	8						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		2		1			
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2					
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Wild boars - wild - from hunting - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified		Zone diameter (mm), number of isolates with a zone of inhibition equal to																											
		Wild boars - wild - from hunting - Clinical investigations																											
		no																											
		7																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Amphenicols - Chloramphenicol		7	0	1																		3	1		1	1			
Amphenicols - Florfenicol		25	0																1	22				1		1			
Tetracyclines - Tetracycline		7	0	2															1	3	1								
Fluoroquinolones - Enrofloxacin		7	0			1															2				1				
Quinolones - Nalidixic acid		7	0	2												1				3		1							
Sulphonamides - Sulfonamide		7	0	2												2				1				1		1			
Aminoglycosides - Streptomycin		7	0	1					1				4			1													
Aminoglycosides - Gentamicin		7	0			1											1	4	1										
Penicillins - Ampicillin		7	0	3												3		1											
Cephalosporins - Cefotaxim		7	0																			1				1			
Cephalosporins - Ceftazidim		7	0																	1		2		2	1	1			
Cephalosporins - Ceftiofur		7	0													1			1			2	2	1					

E.coli, pathogenic, unspecified	Wild boars - wild - from hunting - Clinical investigations						
	no						
	7						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Chloramphenicol							

Table Antimicrobial susceptibility testing of E.coli, pathogenic, unspecified in Wild boars - wild - from hunting - Clinical investigations - quantitative data [Diffusion method]

E.coli, pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Wild boars - wild - from hunting - Clinical investigations						
	no						
	7						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol							
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin		3					
Quinolones - Nalidixic acid							
Sulphonamides - Sulfonamide							
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim		2		2		1	
Cephalosporins - Ceftazidim							
Cephalosporins - Ceftiofur							

2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1 General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/or infection in the country

In bovine populations, eradication measures for tuberculosis started in 1962. The eradication of bovine tuberculosis was considered to be completed at the end of 1980. Since then, only sporadic cases occur.

As regards of tuberculosis in man, the favourable tendency which could be observed from the 1950s in the epidemiology of tuberculosis seemed to stop and getting worse in 1990. (Incidence raised by 19% between 1990 and 1995.) In order to lower the incidence and improve the situation, a National Tuberculosis Programme was adopted in 1994 which also incorporated a national surveillance programme based on a central, computerised database.

Recent actions taken to control the zoonoses

Regular screening of the human population is provided. All farm workers have to be checked by the competent public health authority for their compliance with the rules set for persons dealing with animals and food intended for human consumption. The documents proving their compliance are subject to on farm checks performed by the veterinary service. Each county veterinary authority has the right to set further health requirements for persons dealing with animals kept on small size farms.

2.5.2 Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

The nationwide program for eradication of bovine tuberculosis in Hungary has successfully been completed by 31 December 1980 and the tuberculosis free status of the country were declared to the OIE. Since then no evidence of the presence of infection in more than 0,1 % of our herds has been found.

Monitoring system

Sampling strategy

Post mortem inspections

According to the meat inspection rules in force in Hungary, based on a tradition of at least a century, each animal for slaughter is to be checked individually ante and post mortem. Technical methods applied at meat inspection is suitable to detect even the slightest tuberculous lesions. The legal provisions for tuberculosis require that the organs, together with the lymphnodes belonging to them, shall be sent to the Central Agricultural Office, Veterinary Diagnostic Directorate (former Central Veterinary Institute) for further laboratory examination, if during post mortem inspection of a slaughtered animal the tuberculous lesions are revealed. In case of animals ordered to be slaughtered for establishing the reason for unclarified positive or inconclusive reactions during intradermal tuberculin testing, a set of lymph nodes belonging to several organs and systems, as listed in the Annex 3 of the Decree No. 65/2002. (VIII. 9.) FVM and in the Technical Guideline, shall be sent to the Central Agricultural Office, Veterinary Diagnostic Directorate.

Intradermal tuberculin testing

Together with the post mortem control program, the compulsory intradermal tuberculin testing with a yearly interval of the whole Hungarian cattle population (older than six weeks), as well as case by case testing of animals moved from one herd to another, has been maintained and executed.

Frequency of the sampling

See above.

Methods of sampling (description of sampling techniques)

According to the Annex 3 of the Decree No. 65/2002. (VIII.9) FVM the rules of taking samples are the followings:

• samples taken from animals with a large body (cattle, swine) must include the organs showing signs of the disease and the adjacent lymphatic glands, in case of birds and smaller animals the sample must be an entire carcass;

• samples used for confirming paraallergic reaction must include the tonsils, pharyngeal, mesenteric and portal lymphatic glands of the slaughtered animal;

• the purpose of detecting the presence of mycobacteria from the feedingstuffs, litter, soil etc. 20-50 gramm samples must be taken, 20 gramm samples from faeces, 50cm³ from urine and 5 litres from drinking water. The samples must be sent to the CVI with a view to carry out tests to detect tuberculosis and confirm the presence of mycobacteria.

Case definition

An animal is considered a positive case, if the presence of tuberculosis is confirmed by the isolation of *M. bovis* from its lymph node(s) or parenchymatous organs on laboratory examination.

Suspension or withdrawal of the free status of a herd is based upon the analysis of the results of the intradermal tuberculin tests (if necessary, repeated and completed by simultaneous testing), post mortem examinations and laboratory tests. According to the Annex 1 of the Decree No. 65/2002. (VIII.9) the officially tuberculosis -free status of the herd have to be withdrawn if the presence of tuberculosis is confirmed by the isolation of *M. bovis* on laboratory examination.

Diagnostic/analytical methods used

The identification of *Mycobacterium bovis* is carried out only the Central Agricultural Office, Veterinary Diagnostic Directorate(VDD) (Budapest). The VDD works according to the OIE Manual of Standards for Diagnostic tests and Vaccines, Forth Edition, Chapter 2.3.3. (bovine tuberculosis).

Annex 7. of the Decree No. 65/2002. (VIII.9) FVM contains the standards for the tuberculin (bovine and avian) to be used during the intradermal tests. These rules are fully compatible with Annex B point 2.1. of Council Directive 64/432/EEC.

Annex 2., which contains the standards for the test procedures is fully compatible with Council Directive 64/432/EEC.

Vaccination policy

Preventive vaccination against *M. bovis* is prohibited by Decree No. 65/2002. (VIII. 9.) FVM.

Control program/mechanisms

The control program/strategies in place

The whole cattle population is continuously monitored for bovine tuberculosis on a yearly basis by the intradermal tuberculin tests and by post-mortem inspections.

For measures taken in case of single cases, see "Measures in case of the positive findings or single cases".

Recent actions taken to control the zoonoses

Guidelines have been issued first by the Ministry of Agriculture and Rural Development and later by the Central Agricultural Office (the currently valid guideline was issued in March 2010) about the carrying out the tuberculin test in cattle herds taking into consideration the false positive or interference reactions as well as the data collection, and reporting by the regional authorities.

Measures in case of the positive findings or single cases

When an animal is considered to be a positive reactor in the intradermal tests, it is removed from the herd and slaughtered. The post-mortem, laboratory and epidemiological examinations shall be carried out. The status of the herd will remain suspended until the all laboratory examinations have been completed. If the presence of tuberculosis is not confirmed, the suspension of the officially tuberculosis-free status may be lifted following a test of all animals over six weeks of age with negative results at least 42 days after the removal of the reactor animal.

According to the Annex 1 of the Decree No. 65/2002. (VIII.9) the officially tuberculosis -free status of the herd have to be withdrawn if the presence of tuberculosis is confirmed by the isolation of *M. bovis* on laboratory examination.

The district chief veterinarian may initiate a procedure to withdraw the tuberculosis-free status of the herd, and the animal health and food control station may withdraw the status, if

- Â·the conditions for retention of the officially free status are not complied with, or
- Â·classical lesions of tuberculosis are seen at post-mortem examination,
- Â·an epidemiological enquiry establishes the likelihood of infection,
- Â·it is deemed necessary to control of bovine tuberculosis in the herd for any other reason.

Notification system in place

Bovine tuberculosis is compulsory notifiable by virtue of the Veterinary Act No CLXXVI. of 2005, which replaced the Veterinary Act No XCI of 1995, from 1 September 2008 by the Decree No 113/2008 (VIII. 30.) of the Ministry of Agriculture and Rural Development (MARD) on notification of animal diseases. The detailed rules regarding bovine tuberculosis are laid down by the Decree No. 65/2002. (VIII.9) FVM of the Minister of Agriculture and Rural Development, which texts replaced the relevant parts of the Zoo-Sanitary Code implemented by the Decree No 41/1997. (V. 28.) FM of the Minister of Agriculture. As regards keeping and movements of the bovine animals the Zoosanitary Code is applied further. Before the 1st of July of 1997 the Decree No. 28/1981. (XII. 30.) MEM of the Minister of Agriculture and Alimentation contained the rules for the bovine tuberculosis and keeping or movements of the bovine animals. It is very important that the former legislative rules were essentially the same as the current ones.

Results of the investigation

During the past consecutive seven years the rate of herds infected with bovine tuberculosis has never reached 0,1 % and at least 99,9% of herds have achieved officially tuberculosis free status each year during this period.

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

Hungary is free of bovine tuberculosis. However, sporadic cases are reported.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified
Badgers	CAO VDD	Animal	1	0	0	0	0
Pigs	CAO VDD	Animal	8	3	0	0	3
Sheep	CAO VDD	Animal	1	0	0	0	0
Deer - wild - fallow deer - unspecified - Survey	CAO-VDD	Animal	9	3	1	0	2
Deer - wild - red deer - unspecified - Survey	CAO-VDD	Animal	41	13	9	0	4
Deer - wild - roe deer - unspecified - Survey	CAO-VDD	Animal	2	1	1	0	0
Foxes - wild - unspecified - Survey	CAO-VDD	Animal	11	2	1	0	1
Wild boars - wild - unspecified - Survey	CAO-VDD	Animal	210	69	26	0	43

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

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests	Number of animals tested			
Baranya	426	29459	426	100	0	0	once a year	24481	766	72	0
Borsod-Abaúj-Zemplén	971	41962	969	99.79	0	0	once a year	39805	2248	42	1
Budapest	31	1143	31	100	0	0	once a year	1060	0	0	0
Bács-Kiskun	2100	66134	2099	99.95	1	.05	once a year	52598	1645	20	1
Békés	1630	60690	1627	99.82	0	0	once a year	53209	1317	27	0
Csongrád	1469	40137	1469	100	0	0	once a year	27820	2666	37	0
Fejér	518	43383	518	100	0	0	once a year	40054	2229	11	0
Győr-Moson-Sopron	896	50639	896	100	0	0	once a year	48581	5737	4	0
Hajdú-Bihar	2292	92379	2292	100	0	0	once a year	75502	547	32	0
Heves	352	14588	352	100	0	0	once a year	12626	838	6	0
Jász-Nagykun-Szolnok	1351	53565	1350	99.93	1	.07	once a year	44527	2830	9	1
Komárom-Esztergom	244	13512	242	99.18	1	.41	once a year	12789	292	128	71

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

Nógrád	306	14605	306	100	0	0	once a year	12878	644	48	0
Pest	1239	49013	1238	99.92	1	.08	once a year	43444	5396	55	1
Somogy	582	32308	581	99.83	1	.17	once a year	37569	15106	89	3
Szabolcs-Szatmár-Bereg	1111	40228	1111	100	0	0	once a year	34026	1561	27	0
Tolna	489	23365	488	99.8	1	.2	once a year	21381	4405	29	1
Vas	645	29134	645	100	0	0	once a year	27925	170	3	0
Veszprém	479	39763	479	100	0	0	once a year	35747	4087	22	0
Zala	489	24074	489	100	0	0	once a year	18575	5236	0	0
Total : ¹⁾	17620	760081	17608	99.93	6	.03	N.A.	664597	57720	661	79

Comments:

¹⁾ N.A.

Footnote:

Comment:

The column 'Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological ' does contain the total number of animals suspicious to TB because of positive tuberculin test results (or visible lesions).

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-06-13		Footnote		<p>Comment:</p> <p>The column 'Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological ' does contain the total number of animals suspicious to TB because of positive tuberculin test results (or visible lesions).</p>

2.6 BRUCELLOSIS

2.6.1 General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/or infection in the country

Hungary is practically free of Brucellosis in bovine, ovine and caprine populations. For detailed information, please refer to the specific texts.

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

1. Reporting system in place for the human cases:

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system makes online connection amid the three levels (municipal, county and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case and the infection is laboratory confirmed.

Diagnostic/analytical methods used

A serological test (Widal type tube agglutination) is used to confirm the brucellosis diagnose in Hungary. The test preparation is a TTC stained *B. melitensis* biovar. abortus HNCMB 93007 strain (internationally used diagnostic strain). Result is positive: titre 1:80; uncertain: titre 1:40; negative titre between 1:20 - 1:10. The acute illness is confirmed by the increasing titre of paired sera.

Notification system in place

The disease has been notifiable since 1950 in Hungary. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS. Hungary has also a laboratory based surveillance system, and the NPHMOS has representative dataset from most of the microbiological laboratories about the cases investigated by the laboratory

History of the disease and/or infection in the country

The disease has been notifiable since 1950 in Hungary. The annual number of reported cases ranged between 0 – 132 (incidence: 0 – 1.3/100 000 inhabitants/year, median 21 case/year – 0.2/100 000 inhabitant/year). In the 1950s and 1960s the number of registered cases was about 40 – 60/year. The most cases were registered between 1970 and 1975 (110 – 135 cases/year – incidence: 1.1 – 1.3/100 000 inhabitant/year). Between 1976 and 1986 the number of registered cases decreased to 10 cases/year. 11 death cases occurred between 1950 and 1978. The case fatality rate ranged between 0 – 6.5% (median 0%).

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

There were five cases registered in 2000 - 2001 (2000: 1, 2001: 4 cases), no case was reported between 2002 and 2004, in 2006 and 2008, and only 1-1 case was identified in 2005 and 2007 in Hungary. (The data of laboratory surveillance: 2000 – 4 800 tests, 23 positive; 2001 - 4 900 tests, 30 positive; between 2002 and 2003: about 3 900 tests/year, 6 – 9 /year positive.) No death was registered in this period. One case in 2001 was imported from abroad, in the four other cases between 2000-2001 the place and source of infection could not be identified. Cases registered in 2005 and 2007 were imported cases.

2.6.3 Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

The entire country free

The nationwide programme for eradication of bovine brucellosis in Hungary has successfully been completed by the 31st of August 1985. and the brucellosis free status of the country were declared to the OIE. Since then no evidence of the presence of infection in more than 0,2 % of our herds has been found.

Monitoring system

Sampling strategy

Together with the random blood sampling of the Hungarian cattle population, as well as case-by-case testing of animals moved from one herd to another, a system of checking abortions and irregular parturition has been maintained.

Frequency of the sampling

The whole cattle population in Hungary is subject to regular checks. Investigation of abortion and related cases is the key point of the system. Random, yearly serological testing is a complementary element. 10 % of cows in herds containing 50 or more animals shall be tested yearly, after calving. If necessary, the district veterinary officer is entitled to extend the testing to the whole herd.

Small herds are serologically tested every three years, linked to the EBL screening.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Blood, milk and semen samples are taken at farm. In case of abortion, the aborted fetus, its chorions and a blood sample from the aborted cattle shall be sent to the laboratory.

Case definition

An animal is considered to be infected with B. abortus, when

- it shows clinical signs of the disease and pathological lesions can be detected on its internal organs or on its fetus or on the chorions; or
- bacteria of B. abortus could be isolated from its body fluids, its chorions or from the organs of the fetus, or
- it was suspected to be infected with B. abortus and the serological or bacteriological investigations were positive for that animal.

Diagnostic/analytical methods used

For the diagnosis of B. abortus the following diagnostic methods are used:

- pathology
- bacteriology
- immunology (CFT, ELISA, SAT)

Vaccination policy

Preventive vaccination against B. abortus is prohibited in the whole territory of Hungary.

Control program/mechanisms

Recent actions taken to control the zoonoses

Continuous monitoring of bovine herds and investigation of aborted fetuses as well as pre-movement checks are continued.

Measures in case of the positive findings or single cases

Infected male animals are

to be killed as soon as possible but not later than five days or,
to be castrated and placed under movement prohibition until it is slaughtered.

Female animals must be placed under breeding prohibition and movement control. They must be slaughtered within 15 days after the acute period or the recovery after the abortion.

Notification system in place

Bovine brucellosis (*B. abortus*) is compulsorily notifiable by virtue of the Act on Food Chain Safety and its official control No XLVI of 2008 that is effective since 1 September 2008 and the Decree of the Minister of Agriculture No 12/2008 (II. 14.) on detailed rules of the protection regarding certain *Brucella* species.

Notification, as well as investigation of cases of abortion is compulsory. In case of abortion or irregular parturition, the veterinarian in charge has to send a set of samples, listed in the decree mentioned above, for further laboratory examination. Until thorough clarification of the case, the animal is kept separated and, if necessary, repeatedly tested.

Results of the investigation

During the last 24 years no infection of *B. abortus* has been found.

B. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

The entire country free

Ovine and caprine brucellosis (*B. melitensis*) has been a compulsorily notifiable animal disease in Hungary since 1982. Further to the existing rules laid down in the Zoo-Sanitary Code, the recent legal provisions give the power to the Ministry of Agriculture to introduce any additional measures, should an outbreak of a disease caused by *B. melitensis* occur in our country.

Neither a single clinical case, nor any positive serological or bacteriological test result for *B. melitensis* has ever occurred in Hungary.

Monitoring system

Sampling strategy

Given, that *B. melitensis* is not an agent which can be spread under Hungary's geographical and climatic conditions, furthermore no sign of the disease has ever been revealed, there was no scientifically based reason for an extended serological survey. In 2007, all caprine animals tested for *B. melitensis* were negative.

Frequency of the sampling

Approximately 5% of the caprine population is sampled and tested for *B. melitensis*.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Blood samples are taken at farm.

Case definition

An animal is considered to be infected with *B. melitensis*, when

- it shows clinical signs of the disease and pathological lesions can be detected on its internal organs or on its fetus or on the chorions; or
- bacteria of *B. melitensis* could be isolated from its body fluids, its chorions or from the organs of the fetus, or
- it was suspected to be infected with *B. melitensis* and the serological or bacteriological investigations were positive for that animal.

Diagnostic/analytical methods used

For the diagnosis of *B. melitensis* in goats, the CFT is used.

Vaccination policy

Vaccines for *B. melitensis* have never been registered in Hungary and the using of vaccines without the registration is banned in the country. Therefore no vaccination against this disease has ever been practised in the territory of Hungary.

Control program/mechanisms

The control program/strategies in place

In 2007, Hungary was free of *B. melitensis*. However, monitoring of ovine and caprine populations is continuously done.

Measures in case of the positive findings or single cases

In case of positive findings the positive animals have to be killed without delay. The herd containing the positive animal is subject to movement control. The further measures affecting the herd shall be decided

following screening of the animals and epidemiological investigation.

Notification system in place

Ovine and caprine brucellosis (*B. melitensis*) are compulsorily notifiable by virtue of the Veterinary Act No CLXXVI. of 2005 (which replaced the Veterinary Act No XCI of 1995) and the Zoo-Sanitary Code implemented by the Decree No 41/1997. (V. 28.) FM of the Minister of Agriculture. These legal texts replaced the former regulations, namely Law Decree No 3. of 1981. and Decree No. 28/1981. (XII. 30.) MÅ%M of the Minister of Agriculture and Alimentation, which have contained the same provisions for the diseases mentioned above. Therefore we can declare that ovine and caprine brucellosis is compulsory since 1 January 1982 on the basis of Decree No. 28/1981. (XII. 30.) MÅ%M of the Minister of Agriculture and Alimentation.

Results of the investigation

No evidence of infection with *B. melitensis* were found in 2007.

C. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

The entire country free

Ovine and caprine brucellosis (*B. melitensis*) has been a compulsorily notifiable animal disease in Hungary since 1982. Further to the existing rules laid down in the Zoo-Sanitary Code, the recent legal provisions give the power to the Ministry of Agriculture to introduce any additional measures, should an outbreak of a disease caused by *B. melitensis* occur in our country.

Neither a single clinical case, nor any positive serological or bacteriological test result for *B. melitensis* has ever occurred in Hungary.

Monitoring system

Sampling strategy

Given, that *B. melitensis* is not an agent which can be spread under Hungary's geographical and climatic conditions, furthermore no sign of the disease has ever been revealed, there was no scientifically based reason for an extended serological survey. However, between 1997 and 2000 a limited serological screening was carried out and all results were negative. Since 2001 an extended serological survey has been started to demonstrate the *B. melitensis* free status of Hungary. During 2001, 2002 and 2003 more than 10% of the ovine animals over six months of age were tested serologically for *B. melitensis* and all results were negative. In 2007, all ovine animals tested for *B. melitensis* were negative.

Frequency of the sampling

Approximately 10% of the ovine population were tested.

Type of specimen taken

Blood

Methods of sampling (description of sampling techniques)

Blood samples are taken at farm.

Case definition

An animal is considered to be infected with *B. melitensis*, when

- it shows clinical signs of the disease and pathological lesions can be detected on its internal organs or on its fetus or on the chorions; or
- bacteria of *B. melitensis* could be isolated from its body fluids, its chorions or from the organs of the fetus, or
- it was suspected to be infected with *B. melitensis* and the serological or bacteriological investigations were positive for that animal.

Diagnostic/analytical methods used

For the diagnostic serological tests of *B. melitensis* the CFT is used.

Vaccination policy

Vaccines for *B. melitensis* have never been registered in Hungary and the using of vaccines without the registration is banned in the country. Therefore no vaccination against this disease has ever been practised in the territory of Hungary.

Control program/mechanisms

The control program/strategies in place

In 2007, Hungary was free of *B. melitensis*. However, monitoring of ovine and caprine populations is continuously done.

Measures in case of the positive findings or single cases

In case of positive findings the positive animals have to be killed without delay. The herd containing the positive animal is subject to movement control. The further measures affecting the herd shall be decided following screening of the animals and epidemiological investigation.

Notification system in place

Ovine and caprine brucellosis (*B. melitensis*) are compulsorily notifiable by virtue of the Veterinary Act No CLXXVI. of 2005 (which replaced the Veterinary Act No XCI of 1995) and the Zoo-Sanitary Code implemented by the Decree No 41/1997. (V. 28.) FM of the Minister of Agriculture. These legal texts replaced the former regulations, namely Law Decree No 3. of 1981. and Decree No. 28/1981. (XII. 30.) MEM of the Minister of Agriculture and Alimentation, which have contained the same provisions for the diseases mentioned above. Therefore we can declare that ovine and caprine brucellosis is compulsory since 1 January 1982 on the basis of Decree No. 28/1981. (XII. 30.) MEM of the Minister of Agriculture and Alimentation.

Results of the investigation

No evidence of infection with *B. melitensis* were found.

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

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

Region	Total number of existing		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbiologically	Number of animals positive microbiologically	Number of suspended herds
Magyarország	6903	1005083	6903	100	0	0	2433	54167	0	0	0	0	0	0
Total : ¹⁾	6903	1005083	6903	100	0	0	2433	54167	0	0	0	0	0	0

Comments:

¹⁾ N.A.

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

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

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance						Investigations of suspect cases								
							Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds	Number of bovine herds tested	Number of animals or pools tested	Number of infected herds	Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbiologically	Number of animals positive microbiologically
																		Sero logically	BST		
Baranya	426	29459	426	100	0	0	241	11433	0	0	0	0	66	0	0	0	0	0	0	0	0
Borsod-Abaúj-Zemplén	971	41962	970	99.9	0	0	844	26185	0	0	0	0	100	0	0	0	0	0	0	0	0
Budapest	31	1143	31	100	0	0	31	630	0	0	0	0	1	0	0	0	0	0	0	0	0
Bács-Kiskun	2100	66134	2100	100	0	0	1927	25475	0	24	9242	0	93	0	0	0	0	0	0	0	0
Békés	1630	60690	1630	100	0	0	1630	31237	0	0	0	0	51	0	0	0	0	0	0	0	0
Csongrád	1469	40137	1469	100	0	0	1322	18468	0	0	0	0	63	0	0	0	0	0	0	0	0
Fejér	518	43383	518	100	0	0	374	17952	0	6	1870	0	144	0	0	0	0	0	0	0	0
Győr-Moson-Sopron	896	50639	896	100	0	0	523	24706	0	11	1555	0	134	0	0	0	0	0	0	0	0
Hajdú-Bihar	2292	92379	2292	100	0	0	1908	43215	0	0	0	0	135	0	0	0	0	0	0	0	0
Heves	352	14588	352	100	0	0	334	8286	0	0	0	0	16	0	0	0	0	0	0	0	0
Jász-Nagykun-Szolnok	1351	53565	1351	100	0	0	885	23090	0	0	0	0	18	0	0	0	0	0	0	0	0
Komárom-Esztergom	244	13512	243	99.59	0	0	183	6966	0	0	0	0	35	0	0	0	0	0	0	0	0

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

Nógrád	306	14605	306	100	0	0	295	8512	0	0	0	0	17	0	0	0	0	0	0	0
Pest	1239	49013	1239	100	0	0	1239	28958	0	0	0	0	66	0	0	0	0	0	0	0
Somogy	582	32308	582	100	0	0	547	14891	0	0	0	0	93	0	0	0	0	0	0	0
Szabolcs-Szatmár-Bereg	1111	40228	1111	100	0	0	1111	16919	0	0	0	0	19	0	0	0	0	0	0	0
Tolna	489	23365	489	100	0	0	262	12960	0	22	1183	0	41	0	0	0	0	0	0	0
Vas	645	29134	645	100	0	0	411	14975	0	0	0	0	73	0	0	0	0	0	0	0
Veszprém	479	39763	479	100	0	0	380	21340	0	0	0	0	4	0	0	0	0	0	0	0
Zala	489	24074	489	100	0	0	400	9894	0	1	391	0	8	0	0	0	0	0	0	0
Total : ¹⁾	17620	760081	17618	99.99	0	0	14847	366092	0	64	14241	0	1177	0	0	0	0	0	0	0

Comments:

¹⁾ N.A.

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

Additional information

diagnostic methods: bacteriological examination and
PCR

2.7.2 Yersiniosis in humans

A. Yersiniosis in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system makes online connection between the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the *Yersinia* infection is laboratory confirmed.

Diagnostic/analytical methods used

Yersinia isolates are obtained by culturing the faeces samples of the patients on selective-differentiating media, which is followed by biochemical tests and serotyping. Earlier the sera of the patient was tested by Widal-typed method, beside this test the ELISA method has been also in use since 2003.

Notification system in place

Human cases have been notifiable since 1998. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS. Hungary has also a laboratory based surveillance system, and the NPHMOS has representative dataset from most of the microbiological laboratories about the laboratory investigated cases (since 2003 antibiotic resistances has also been reported from 20 county institutes and 12 laboratories from universities or hospitals).

The illness is reported firstly as enteritis infectiosa syndrome on the basis of the symptoms. Having the results of the laboratory tests this syndrome-based diagnose is modified to etiology-based diagnose. There is a part of the cases which are reported only subsequently when the result of the laboratory test is available.

History of the disease and/or infection in the country

The human cases have been notifiable since 1998. The number of cases varied between 68 – 176/year (incidence: 0,7 – 1,7/100 000 inhabitant/year, median 125 cases/year - 1,3/100 000 inhabitant/year). There was no death registered. A few number of family outbreaks were investigated, community or institutional outbreaks did not occur. Laboratory or epidemiological evidences are not available to assess the source of infection.

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

Yersiniosis do not influence significantly the epidemiological situation of the human acut gastroenteritis caused by zoonotic agents. Between 2000 -2004 the dominant serotype is *Y.enterocolitica* O3. It is confirmed also by the results of culture and serologic methods.

2.7.3 Yersinia in animals

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - Y. enterocolitica, unspecified
Cattle (bovine animals)	CAO-VDD	Animal	3	1			1			
Monkeys - zoo animal - at zoo - Clinical investigations	CAO_VDD	Animal	7	1		1				

2.8 TRICHINELLOSIS

2.8.1 General evaluation of the national situation

A. Trichinellosis general evaluation

History of the disease and/or infection in the country

In Hungary, mandatory testing for *Trichinella* spp. is in place since 1960. Slaughtered susceptible animals intended to be placed on the market are subject to mandatory testing for *Trichinella* spp.

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

Trichinellosis was a significant zoonotic disease in Hungary in the 1950s and 1960s. Due to the introduction of control strategies, the average annual incidence of trichinellosis decreased to 0-0.7 cases per 100,000 for the early 1990s. In the past 15 years, the annual incidence dropped to 0-0.07 cases per 100,000, and no mortality in men caused by the parasite was observed in the same period. The decrease of incidence observed in men is similar to that of prevalence seen in swine at slaughterhouses.

Nevertheless, some increasing trends of incidence might be observed in both men and swine in the past years. *Trichinella spiralis* still persists in the southern and eastern border region of the country. Sporadic *Trichinella* infections (in average few cases per year) were also detected in wild boars and in less than 1.8% of red foxes. In wild boars, both *T. spiralis* and *Trichinella britovi* were detected. In foxes, *T. britovi* is the dominant species; nevertheless, *T. spiralis* and *Trichinella pseudospiralis* were also reported from this species.

Recent actions taken to control the zoonoses

Mandatory testing during meat inspection in all susceptible cases (swine, horse, nutria, wild boar).

2.8.2 Trichinellosis in humans

A. Trichinellosis in humans

Reporting system in place for the human cases

There are about 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection between the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the *Trichinella* infection is laboratory confirmed.

Probable case: a clinically compatible case that is not confirmed by laboratory investigation, but it has an epidemiological link to a confirmed trichinellosis outbreak.

Diagnostic/analytical methods used

Microprecipitic test on live larvae as diagnostic method has been used since 1983 in the Helminthozoonotic Reference Laboratory of the National Centre of Epidemiology. Parallel with this test an ELISA test (NOVATEC TRICHINELLA SPIRALIS IgG-ELISA, NovaTec Immundiagnostica, Germany) was introduced in 2002. The positive results of the previously mentioned tests have been confirmed by WB (TRICHINELLA WESTERN BLOT IgG, Ldbio Diagnostics, France) since 2004.

Notification system in place

Human cases have been notifiable since 1960. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS.

History of the disease and/or infection in the country

Human cases have been notifiable since 1960. The number of cases varied between 0 – 121 (incidence 0 – 1,2/100 000 inhabitants/year – the highest one was registered in 1964). Between 1960 and 2004 the 85% of cases had epidemiological link to an outbreak. Only one death case has been registered during the Hungarian history of trichinellosis.

Between 1960 and 1975 the swine were the source of infection in 18 outbreaks (83% of all outbreaks) and wild boar in 17% of outbreaks. The significance of swine as the source of infection decreased between 1976 and 1995: 3 outbreaks (23%) were caused by swine, and 10 outbreaks (77%) were associated with consumption of wild boar meat. (Indigenous swine were the source of two outbreaks in 1978 and 1990, and swine imported from Romania and processed at home were the source of one outbreak in 1995).

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

In the last ten years the number of reported cases ranged between 0 – 7/year (incidence 0 – 0,07/100 000 inhabitants/year), there was no death in this period. All cases linked to family outbreaks and most of sporadic cases were imported from the neighbouring counties. The indigenous cases were linked to the

consumption of indigenous wild boar meat. All human cases were caused by *T.spiralis*.

2.8.3 Trichinella in animals

A. Trichinella in pigs

Monitoring system

Sampling strategy

Trichinella sampling and testing is mandatory for all pigs intended to be placed on the market.

Frequency of the sampling

Every slaughtered animal is sampled

Type of specimen taken

Diaphragm muscle

Methods of sampling (description of sampling techniques)

Methods specified in Regulation 2075/2005/EC

Case definition

Animal with one or more Trichinella larva in the official examination.

Diagnostic/analytical methods used

Artificial digestion method of collective samples

Vaccination policy

None.

Control program/mechanisms

The control program/strategies in place

See above.

Measures in case of the positive findings or single cases

Positive cases are considered not to be eligible for human consumption.

Results of the investigation

All slaughtered swine were investigated in 2010, there was no positive finding for Trichinella.

B. Trichinella in horses

Monitoring system

Sampling strategy

Trichinella testing is mandatory, all animal is sampled.

Frequency of the sampling

Every slaughtered animal is sampled

Type of specimen taken

Diaphragm muscle

Methods of sampling (description of sampling techniques)

2075/2005/EC regulation

Case definition

Animal with one or more Trichinella larva in the official examination

Diagnostic/analytical methods used

Artificial digestion method of collective samples

Vaccination policy

None.

Measures in case of the positive findings or single cases

Positive cases are considered not to be eligible for human consumption.

Results of the investigation

All the 36 slaughtered horses (as all other susceptible animals) were investigated in 2008. There was no positive finding for trichinella.

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

Trichinella infection has never been detected in horses in Hungary.

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella	T. spiralis	Trichinella spp., unspecified	T. britovi	T. pseudospiralis
Foxes ¹⁾	CAO-VDD	Animal	80	3	0	0	3	
Pigs ²⁾	CAO VDD, CAO FFSD	Animal	4678081	0	0	0	0	0
Rats	CAO-VDD	Animal	1	0				
Solipeds, domestic - horses ³⁾	CAO VDD, CAO FFSD	Animal	394	0				
Wild boars - wild ⁴⁾	CAO-VDD, CAO FFSD	Animal	50884	9		2	6	1

Comments:

¹⁾ monitoring²⁾ meat inspection³⁾ meat inspection⁴⁾ meat inspection

2.9 ECHINOCOCCOSIS

2.9.1 General evaluation of the national situation

A. Echinococcus spp. general evaluation

History of the disease and/or infection in the country

Echinococcus granulosus

Cystic echinococcosis caused by *E. granulosus* was a significant zoonosis in Hungary in the 1960s and 1970s. Due to the introduction of integrated control strategies, the average annual incidence of human cystic echinococcosis decreased to 0.08-0.2 case per 100,000 population for the early 1990s. The decrease of incidence observed in man is almost parallel with that of overall prevalence seen in swine, sheep and cattle at slaughterhouses.

Echinococcus multilocularis was not detected in man or animals in Hungary until 2002.

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

Echinococcus granulosus

In the past decade, the annual incidence was 0.05-0.1 case per 100,000 human population. The prevalence was under 0.2% in sheep, cattle and swine at slaughterhouses. Genotype identification of slaughterhouse isolates was initiated in 2010.

Echinococcus multilocularis

E. multilocularis was first detected in red foxes (*Vulpes vulpes*) in Hungary in the northern border area in 2002. Between 2002 and 2004, the parasite was described in 7 northern counties with low overall prevalence (8.7%) in foxes. In the study carried out in 2009, *E. multilocularis* was detected in foxes of 16 out of the 19 Hungarian counties and in the suburban areas of the capital, Budapest. The prevalence of infection was significantly higher in the north-western half (16.2%) than in the south-eastern half (4.2%) of the country. The multi-locus microsatellite analysis of the isolates indicate that Hungary should be considered as a peripheral area of a single European focus, where the dispersal movement of foxes resulted in the spreading of *E. multilocularis* within a time period short enough to avoid a substantial genetic drift.

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Reporting system in place for the human cases

There are about 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection amid the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the Echinococcus infection is laboratory confirmed

Diagnostic/analytical methods used

The punctatum originated from cyst or sample from extracted cyst is investigated by microscopic methods. IHA (CELLOGNOST ECHINOCOCCOSIS for IHA, Dade Behring, Germany) and ELISA (HYDATIDOSIS ELISA IgG, Vircell, Spain) screening methods have been used parallel since 2002 in the Helminthozoonoses Reference Laboratory in 'Johan Béla' National Centre for Epidemiology. The positive results are confirmed by Western blot method (WB) (ECHINOCOCCUS WESTERN BLOT IgG, Ldbio Diagnostics, France).

Notification system in place

The disease has been notifiable since 1950 in Hungary. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The specialist of the institute records data immediately in the electronic system of the NPHMOS.

History of the disease and/or infection in the country

Complement-fixed test has been used since 1934 in Hungary to identify the presence of anti-Echinococcus antibody titre. The human cases have been notifiable since 1960. The „home made” indirect hemagglutination (IHA) was introduced in 1985, and the „home made” ELISA method in 1987. The number of registered cases ranged between 0 – 18 /year (more than 10 cases registered in the 1980s only), the incidence varied between 0 – 0.2 cases/100 000 inhabitants/year. There were 0 – 4 death cases reported yearly (the median of case fatality rate: 20%). Since 1991 there has not been any death case with this diagnosis.

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

The number of annually reported cases varied between 5 and 13 in the last five years, there was no death registered. All the reported cases were caused by *E. granulosus* confirmed in the reference laboratory by Western immunoblot method. In Hungary, autochthonous human case has not been identified as *E. multilocularis* infection.

2.9.3 Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals)	CAO-VDD	Animal	Magyarország	16000	12	12		
Pigs	CAO-VDD	Animal	Magyarország	120000	2	2		
Sheep	CAO-VDD	Animal	Magyarország	1500	3	3		

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

2.10.2 Toxoplasmosis in humans

A. Toxoplasmosis in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system makes online connection amid the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: a clinically compatible case when the Toxoplasma infection is laboratory confirmed.

Diagnostic/analytical methods used

The anti-Toxoplasma ELISA IgG and IgM methods (TOXONOSTIKA IgG, TOXONOSTIKA IgM, Organon Teknika, Hollandia) are used in the everyday diagnostic work since 1986 in Hungary. Today the specific anti-Toxoplasma IgG (PLATELIA® Toxo IgG, Bio-Rad, France), IgM (PLATELIA® Toxo IgM, Bio-Rad, France), IgA ELISA-t (PLATELIA® Toxo IgA, Bio-Rad, France), IgG avidity identification (VIDAS, BioMérieux S/A, France) is used to test for the anti-Toxoplasma serologic profile.

The PCR method (classical: PRODECT TOXO B1, Bioanalisi Centro Sud s.n.c., Italy; and the light cyclor method: LIGHTCYCLER FASTSTART DNA MASTERPLUS HYBRIDIZATION PROBES, Roche (Hungary) Ltd.), further the IgG/IgM Western blot test comparing the immunprofile of mother and child (TOXOPLASMA WESTERN BLOT IgG/IgM, Ldbio Diagnostics, France) are applied. For quality assurance purposes the Toxoplasma Reference Laboratory participate twice in a year in proficiency test, and the Reference Laboratory also organise proficiency tests for laboratory of NPHMOS.

History of the disease and/or infection in the country

Anti-Toxoplasma antibody assay (Sabin-Feldman dye test) has been in use since 1958 in Hungary. The human cases have been notifiable since 1967. The „home made” complement-fixed assay and indirect hemagglutination methods (IHA) were introduced in 1969.

The annual number of registered cases ranged between 0 – 333 (median: 136 case/year), so the incidence varied 0 – 3.1/100 000 inhabitants/year (median 1.3/100 000/year). Between 1970 and 1985 the highest number of death cases reported was 1 – 5 deaths/year (max. case fatality rate 10%). Only two death cases occurred between 1985 and 2004.

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

The number of annually registered cases ranged between 292 - 107 /year (incidence 2,9 – 1,1/100 000 inhabitant/year – median 1,8/100 000 inhabitant/year), the trend of the incidence is decreasing. There was no death registered in this period. It was a seroprevalence survey performed by Helminthozoonotic Reference Laboratory of National Centre for Epidemiology in 2001. 6 985 persons without signs or symptoms were tested by serologic method for the presence of Toxoplasma antibodies. The proportion of positive persons ranged between 22,8% - 41,3% by county. The proportion of positive persons was 75% among pupils aged more than 60 years.

2.10.3 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cats	Veterinary Diagnostics Directorate	Animal	1	1	1
Sheep	CAO-VDD	Animal	3	0	
Kangaroos - zoo animal - at zoo - Survey	CAO-VDD	Animal	3	3	3
Monkeys - zoo animal - at zoo - Survey	CAO-VDD	Animal	5	5	5

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

At the beginning of the twentieth century, rabies predominantly occurred in Hungary in its urban form and was transmitted to humans mainly by dogs. Therefore, in the 1930's strict animal health regulations were introduced, the main elements of these remained unchanged till recent days. These measures included nationwide mandatory regular vaccination of dogs over three months of age.

During World War II, epidemiological actions were hindered, which resulted in a re-emergence of urban rabies in 1946-47.

The re-introduction of regulatory measures as well as mandatory preventive vaccination, urban rabies seems to be sporadic in Hungary. The register of the annual vaccination of dogs show that around 1.5 Million of dogs are vaccinated every year.

In recent days, together with the disappearing of rabies from dogs, rabies in cats is considered to be of high importance. Preventive vaccination of cats against rabies is recommended but not mandatory and special epidemiological aspects are to be considered. (The movement of animals is hard to control and there is a relative large number of semi-wild living animals of this species.)

Sylvatic rabies reached the North-Eastern part of Hungary in the year 1954. Until 1966 cases remained sporadic (a total of 97 foxes, 16 badgers and wild cats confirmed positive for rabies). In the same timeframe, 35 dogs and 96 domestic cats were confirmed positive for the disease.

In 1967, sylvatic rabies crossed the Danube and by 1971 the whole country was infected. At this time, intensive attempts were executed in order to lower the number of foxes, with minimum results. These actions were suspended in 1987.

Between 1988 and 1996 around 1000 rabies cases in foxes were diagnosed per year. Oral vaccination of foxes was introduced in Hungary in 1997. From that year, the rabies cases in foxes decreased year by year, as the vaccination zone was extended from the western part of the country to the whole territory of Hungary. From 1988, rabies cases in foxes decreased by 90%.

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

It is of high importance that the countrywide oral vaccination of foxes is continued. This practice should be extended to neighbouring countries which do not apply such measures.

Recent actions taken to control the zoonoses

In order to eradicate rabies from Hungary and to protect public health, regulatory measures on domestic animals are in place. Regular preventive vaccination of dogs is mandatory from 3 months of age.

Unattended dogs are removed from public areas and are vaccinated against the disease.

Oral vaccination of foxes is done on the whole territory of Hungary.

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

There are around 80 communicable diseases notifiable in Hungary based on legal background. The physician (in primary health care, specialist care, inpatient medical institution or pathology) who first diagnoses a case of a notifiable communicable disease (even the suspicion of the disease!) immediately reports data of case to the first level of the epidemiological network (municipal institute) of National Public Health and Medical Officer's Service (NPHMOS). The suspicion of the human lyssa is obligatory to be reported immediately also by telephone. Data must be reported both at the beginning and at end of the illness (recovery/death, result of laboratory test). The NPHMOS has a nationwide electronic system for registering and analysing data of communicable diseases in a combined national database, so the system provides online connection between the three levels (municipal, regional and national level – National Centre of Epidemiology - NCE) of the organization. The NCE prepares reports regularly (weekly, monthly, yearly) to the Chief Medical Officer, the MoH and the Hungarian Central Statistical Office.

Case definition

Confirmed case: Clinical picture compatible with human lyssa and the antigen/genetic material/specific antibodies are identified or viruses have been isolated from appropriate sample.

Suspected case: Clinical picture compatible with human lyssa and the patient has anamnestic data about exposure by a rabies suspected animal

Diagnostic/analytical methods used

The identification of the virus in vivo from cornea imprint of the patient by immunofluorescence method, or to determine the specific antibody titre of the blood or liquor by immunofluorescence method during the second week of the illness. Post mortem: detection of the Negri-body in the brain tissue, or the antigen by immunofluorescence method, or identification of the viral genetic material by PCR, or isolation of the virus in mouse.

Notification system in place

Human cases have been notifiable since 1950 in Hungary, injury suspected to lyssa-infection has been notifiable since 1964. The physician reports data of case on a "case report form" by mail to the municipal institute of NPHMOS. The suspicion of the human lyssa is obligatory to be reported immediately also by telephone. The specialist of the institute records data immediately in the electronic system of the NPHMOS.

History of the disease and/or infection in the country

Human cases have been notifiable since 1950 in Hungary, injury suspect to human lyssa-infection has been notifiable since 1964. 8 human lyssa cases have been reported since 1950 in Hungary. Seven cases were indigenous; only one case was presumably imported from Africa. Cat was the source of infection in four of the cases, fox in two cases, and one case was caused by a dog. The origin of the imported case remained unknown. The vaccine based on brain-extract was used for post exposure prophylaxis in Hungary until 1989. Since then the cell cultured vaccine has been used. The change in the vaccine used and not in the epidemiological situation of lyssa is reflected in the statistics of vaccinated persons (1985 – 1988.: 2000 – 3000 person vaccinated/year, 1994 – 1998. 8000 – 10 500/year, 1999 - 2003.: 9 500 – 11 000/year).

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

No human lyssa case has been registered since 1994 in Hungary.

2.11.3 Lyssavirus (rabies) in animals

Table Rabies in animals

	Source of information	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Lyssavirus, unspecified	Classical rabies virus (genotype 1)	European Bat Lyssavirus - unspecified
Badgers - wild	CAO-VDD	Animal	Magyarország	28	0			
Bats - wild	CAO-VDD	Animal	Magyarország	13	1			1
Cats	CAO-VDD	Animal	Magyarország	302	0			
Cattle (bovine animals)	CAO-VDD	Animal	Magyarország	19	0			
Deer	CAO-VDD	Animal	Magyarország	3	0			
Dogs	CAO-VDD	Animal	Magyarország	254	1		1	
Foxes - wild	CAO-VDD	Animal	Magyarország	5187	9		9	
Sheep	CAO-VDD	Animal	Magyarország	18	0			
Solipeds, domestic	CAO-VDD	Animal	Magyarország	13	0			
Wild boars - wild	CAO-VDD	Animal	Magyarország	7	0			
Wolves - wild	CAO-VDD	Animal	Magyarország	1	0			
Jackals - wild - unspecified - Survey	CAO-VDD	Animal	Magyarország	8	0			
Marten - wild - unspecified - Survey	CAO-VDD	Animal	Magyarország	10	0			
Polecats - wild - unspecified - Survey	CAO-VDD	Animal	Magyarország	17	0			
Rats - wild - unspecified - Survey	CAO-VDD	Animal	Magyarország	20	0			

Table Rabies in animals

2.12 STAPHYLOCOCCUS INFECTION

2.12.1 General evaluation of the national situation

2.12.2 Staphylococcus in animals

Table Staphylococcus in Animals

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcus	Total units positive for S. aureus, methicillin resistant (MRSA)	S. aureus, methicillin resistant (MRSA) - spa-type t011	S. aureus, methicillin resistant (MRSA) - spa-type t108	S. aureus, methicillin resistant (MRSA) - spa-type t034	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified
Cattle (bovine animals)	CAO-VDD	Animal		4514	0	0				0
Pigs	CAO-VDD	Animal		14	2	2		2		0
Gallus gallus (fowl)	CAO-VDD	Animal		154	0	0				0
Turkeys	CAO-VDD	Animal		24	0	0				0
Other animals	CAO-VDD	Animal		48	0	0				0

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-06-13	Cattle (bovine animals)	Total units positive for Staphylococcus	312	0
	Gallus gallus (fowl)	Total units positive for Staphylococcus	109	0
	Other animals	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified	31	0
	Pigs	Total units positive for Staphylococcus	11	2
	Other animals	Total units positive for S. aureus, methicillin resistant (MRSA)	31	0
	Turkeys	Total units positive for Staphylococcus	11	0
	Other animals	Total units positive for Staphylococcus	31	0
	Turkeys	Total units positive for S. aureus, methicillin resistant (MRSA)	11	0
	Gallus gallus (fowl)	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified	109	0
	Cattle (bovine animals)	Total units positive for S. aureus, methicillin resistant (MRSA)	312	0
	Pigs	Total units positive for S. aureus, methicillin resistant (MRSA)	11	2
	Cattle (bovine animals)	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified	312	0
	Turkeys	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified	11	0
	Pigs	S. aureus, methicillin resistant (MRSA) - MRSA, unspecified	9	0
	Gallus gallus (fowl)	Total units positive for S. aureus, methicillin resistant (MRSA)	109	0

2.13 Q-FEVER

2.13.1 General evaluation of the national situation

A. *Coxiella burnetii* (Q-fever) general evaluation

Additional information

Diagnostic methods : Complement fixation test (CFT) and
immunohistochemical test

2.13.2 Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii
Cattle (bovine animals)	CAO-VDD	Animal	7	0	
Sheep	CAO-VDD	Animal	1	1	1

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

3.1.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	56	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	56	0
Amphenicols - Florfenicol	0	0
Cephalosporins - 3rd generation cephalosporins	0	0
Fluoroquinolones - Ciprofloxacin	56	10
Fluoroquinolones - Enrofloxacin	0	0
Quinolones - Nalidixic acid	56	11
Trimethoprim	56	9
Sulphonamides - Sulfonamide	0	0
Aminoglycosides - Streptomycin	56	13
Aminoglycosides - Gentamicin	56	0
Aminoglycosides - Neomycin	0	0
Aminoglycosides - Kanamycin	0	0
Trimethoprim + Sulphonamides	0	0

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	56	
Antimicrobials:	N	n
Penicillins - Ampicillin	56	18
Tetracyclines - Tetracycline	56	15
Fully sensitive	56	27
Resistant to 1 antimicrobial	56	13
Resistant to 2 antimicrobials	56	3
Resistant to 3 antimicrobials	56	5
Resistant to 4 antimicrobials	56	1
Resistant to >4 antimicrobials	56	7
Cephalosporins - Cefotaxim	56	0
Sulphonamides - Sulfamethoxazol	56	13

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
	yes	
	24	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory		
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	24	2
Amphenicols - Florfenicol	0	0
Cephalosporins - 3rd generation cephalosporins	0	0
Fluoroquinolones - Ciprofloxacin	24	4
Fluoroquinolones - Enrofloxacin	0	0
Quinolones - Nalidixic acid	24	5
Trimethoprim	24	11
Sulphonamides - Sulfonamide	0	0
Aminoglycosides - Streptomycin	24	8
Aminoglycosides - Gentamicin	24	0
Aminoglycosides - Neomycin	0	0
Aminoglycosides - Kanamycin	0	0
Trimethoprim + Sulphonamides	0	0
Penicillins - Ampicillin	24	10
Tetracyclines - Tetracycline	24	12
Fully sensitive	24	5
Resistant to 1 antimicrobial	24	4
Resistant to 2 antimicrobials	24	2
Resistant to 3 antimicrobials	24	5

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	24	
Antimicrobials:	N	n
Resistant to 4 antimicrobials	24	4
Resistant to >4 antimicrobials	24	4
Cephalosporins - Cefotaxim	24	0
Sulphonamides - Sulfamethoxazol	24	13

Table Antimicrobial susceptibility testing of E. coli in Meat from broilers (Gallus gallus)

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	28	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	28	1
Amphenicols - Florfenicol	0	0
Cephalosporins - 3rd generation cephalosporins	0	0
Fluoroquinolones - Ciprofloxacin	28	17
Fluoroquinolones - Enrofloxacin	0	0
Quinolones - Nalidixic acid	28	17
Trimethoprim	28	6
Sulphonamides - Sulfonamide	0	0
Aminoglycosides - Streptomycin	28	3
Aminoglycosides - Gentamicin	28	0
Aminoglycosides - Neomycin	0	0
Aminoglycosides - Kanamycin	0	0
Trimethoprim + Sulphonamides	0	0
Penicillins - Ampicillin	28	11
Tetracyclines - Tetracycline	28	12
Fully sensitive	28	5
Resistant to 1 antimicrobial	28	4
Resistant to 2 antimicrobials	28	7
Resistant to 3 antimicrobials	28	4

Table Antimicrobial susceptibility testing of *E. coli* in Meat from broilers (*Gallus gallus*)

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	28	
Antimicrobials:	N	n
Resistant to 4 antimicrobials	28	2
Resistant to >4 antimicrobials	28	4
Cephalosporins - Cefotaxim	28	3
Sulphonamides - Sulfamethoxazol	28	6

Table Antimicrobial susceptibility testing of E. coli in Meat from other poultry species

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	E.coli, non-pathogenic, unspecified	
	yes	
	84	
Antimicrobials:	N	n
Amphenicols - Chloramphenicol	84	12
Amphenicols - Florfenicol	0	0
Cephalosporins - 3rd generation cephalosporins	0	0
Fluoroquinolones - Ciprofloxacin	84	34
Fluoroquinolones - Enrofloxacin	0	0
Quinolones - Nalidixic acid	84	35
Trimethoprim	84	26
Sulphonamides - Sulfonamide	0	0
Aminoglycosides - Streptomycin	84	22
Aminoglycosides - Gentamicin	84	0
Aminoglycosides - Neomycin	0	0
Aminoglycosides - Kanamycin	0	0
Trimethoprim + Sulphonamides	0	0
Penicillins - Ampicillin	84	36
Tetracyclines - Tetracycline	84	53
Fully sensitive	84	10
Resistant to 1 antimicrobial	84	11
Resistant to 2 antimicrobials	84	19
Resistant to 3 antimicrobials	84	15

Table Antimicrobial susceptibility testing of *E. coli* in Meat from other poultry species

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials:	E.coli, non-pathogenic, unspecified	
	yes	
	84	
	N	n
Resistant to 4 antimicrobials	84	10
Resistant to >4 antimicrobials	84	19
Cephalosporins - Cefotaxim	84	2
Sulphonamides - Sulfamethoxazol	84	31

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Cattle (bovine animals) - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, non-pathogenic, unspecified	Cattle (bovine animals) - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring																											
	yes																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		132	0	2			1		1	1								9	10	29	14	18	18	14	5	9		
Amphenicols - Florfenicol		131	0												2		4	12	8	32	18	21	9	16	3	4		
Tetracyclines - Tetracycline		132	0	12		1	1	1					2	2	4	16	11	23	16	23	6	10	3	1				
Fluoroquinolones - Enrofloxacin		132	0						1							1					10	5	4	10	13	27		
Quinolones - Nalidixic acid		132	0	2													11	18	13	20	23	24	8	9		3		
Sulphonamides - Sulfonamide		132	0	25		1				4		4	4		16	15	9	18	7	8	5	7		4	2	2		
Aminoglycosides - Streptomycin		132	0	3		1		1	4		7		32	29	25	22	3	4	1									
Aminoglycosides - Gentamicin		132	0	1						1			3	9	10	28	27	25	15	11	1	1						
Penicillins - Ampicillin		124	0								2		5	1	41	26	25	14	3	7								
Cephalosporins - Cefotaxim		124	0																	1	2			4		72		
Cephalosporins - Ceftazidim		132	0																		15	31	16	27	9	18		
Cephalosporins - Ceftiofur		132	0																14	15	29	31	18	11	6	7		

E.coli, non-pathogenic, unspecified	Cattle (bovine animals) - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring						
	yes						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol		1					

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Cattle (bovine animals) - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

E.coli, non-pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring						
	yes						
Antimicrobials:	29	30	31	32	33	34	>=35
Amphenicols - Florfenicol		2					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	11	18	4	17	2	9	
Quinolones - Nalidixic acid	1						
Sulphonamides - Sulfonamide	1						
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	10	18	2	12	3		
Cephalosporins - Ceftazidim	5	8		3			
Cephalosporins - Ceftiofur		1					

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Pigs - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, non-pathogenic, unspecified	Pigs - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring																											
	Isolates out of a monitoring program (yes/no) yes																											
	Number of isolates available in the laboratory 255																											
Antimicrobials:	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Amphenicols - Chloramphenicol		255	0	15		5	6	8	6	3						2	1	9	17	40	22	33	31	28	8	14		
Amphenicols - Florfenicol		255	0	23			1				1			1	3		14	23	13	40	21	47	17	28	6	13		
Tetracyclines - Tetracycline		255	0	142	2	13	11	7	5					1	2	7	5	14	10	21	6	7	2					
Fluoroquinolones - Enrofloxacin		254	0				1	1	1		1		1				3	3	1		10	9	11	27	18	34		
Quinolones - Nalidixic acid		254	0	8			2				2				1	1	15	26	27	51	34	35	18	19	7	2		
Sulphonamides - Sulfonamide		255	0	106		1			1	5		1	1		21	13	7	25	10	25	12	14	1	8		2		
Aminoglycosides - Streptomycin		254	0	37		8	10	19	27	1	6	1	41	32	20	30	14	7	1									
Aminoglycosides - Gentamicin		255	0	1									10	17	15	39	54	48	30	28	4	6	2	1				
Penicillins - Ampicillin		255	0	96		1		1					4	1	34	29	25	31	18	13		2						
Cephalosporins - Cefotaxim		255	0										2						2	2	2	3	2	1	4	110		
Cephalosporins - Ceftazidim		255	0	1														1		1	22	35	25	54	25	41		
Cephalosporins - Ceftiofur		440	0	1							1			1	1	1		1	205	35	29	45	35	37	18	19		

E.coli, non-pathogenic, unspecified	Pigs - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring						
	Isolates out of a monitoring program (yes/no)						
	Number of isolates available in the laboratory						
	Antimicrobials:	29	30	31	32	33	34
Amphenicols - Chloramphenicol		1	5		1		

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Pigs - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

E.coli, non-pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - mixed herds - at slaughterhouse - animal sample - caecum - Monitoring						
	yes						
	255						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol	1	3					
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	15	47	11	33		17	10
Quinolones - Nalidixic acid	3	1		2			
Sulphonamides - Sulfonamide		2					
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	10	59	7	26	7	12	6
Cephalosporins - Ceftazidim	12	32	1	2	1	2	
Cephalosporins - Ceftiofur	3	8					

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Gallus gallus (fowl) - mixed flocks/holdings - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - mixed flocks/holdings - at slaughterhouse - animal sample - caecum - Monitoring																											
	yes																											
	147																											
	Cut-off value	N	n	<=6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Antimicrobials:		146	0	7		1	1		3		2				1	7	9	24	18	27	14	14	5	9				
Amphenicols - Chloramphenicol		146	0	7		1	1		3		2				1	7	9	24	18	27	14	14	5	9				
Amphenicols - Florfenicol		147	0	5									1			8	20	9	23	16	21	10	18	4	6			
Tetracyclines - Tetracycline		147	0	29		10	7	5	1		1		1	2	3	8	5	16	7	26	8	11	2	3	1	1		
Fluoroquinolones - Enrofloxacin		147	0	8		3	4	13	8	8	5	7	5	6	1	2	5	7	4		23	4	5	4	4	7		
Quinolones - Nalidixic acid		147	0	95	1	8	3	5		3	2					2	1	4	9	3	3	4	2		1			
Sulphonamides - Sulfonamide		147	0	52	2		1			2		3	1		7	10	5	14	11	16	4	7		5	2	4		
Aminoglycosides - Streptomycin		147	0	11		1	2	4	11	1	8	1	29	23	27	16	9	3		1								
Aminoglycosides - Gentamicin		116	0					1		1			5	7	10	23	31	16	17	1	3	1						
Penicillins - Ampicillin		147	0	71							2	1	2		24	10	15	15	3	3	1							
Cephalosporins - Cefotaxim		147	0											1	1	1	3	1	1	2	3	3				53		
Cephalosporins - Ceftazidim		137	0									2	1	1	2	1		3	1		11	16	25	31	8	6		
Cephalosporins - Ceftiofur		146	0										1	1	4	1			15	16	24	23	19	25	8	5		

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - mixed flocks/holdings - at slaughterhouse - animal sample - caecum - Monitoring						
	yes						
	147						
	29	30	31	32	33	34	>=35
Amphenicols - Chloramphenicol	2		2				

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Gallus gallus (fowl) - mixed flocks/holdings - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Diffusion method]

E.coli, non-pathogenic, unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - mixed flocks/holdings - at slaughterhouse - animal sample - caecum - Monitoring						
	yes						
	147						
	29	30	31	32	33	34	>=35
Antimicrobials:							
Amphenicols - Florfenicol	2	3		1			
Tetracyclines - Tetracycline							
Fluoroquinolones - Enrofloxacin	1	6	1	2	2		2
Quinolones - Nalidixic acid		1					
Sulphonamides - Sulfonamide		1					
Aminoglycosides - Streptomycin							
Aminoglycosides - Gentamicin							
Penicillins - Ampicillin							
Cephalosporins - Cefotaxim	8	34	5	18	2	6	5
Cephalosporins - Ceftazidim	8	14	5	1			1
Cephalosporins - Ceftiofur	1	3					

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

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

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

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

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

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

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

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

Test Method Used	Standard methods used for testing
Disc diffusion	EFSA Q 2007 131

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Streptomycin	300	13	12
	Gentamicin	10	11	10
Amphenicols	Chloramphenicol	30	13	12
Penicillins	Ampicillin	10	18	17
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin	30	15	14
Macrolides	Erythromycin	15	15	14
Streptogramins	Quinupristin/Dalfopristin	0	0	0
Tetracyclines	Tetracycline	30	18	17

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

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Oxazolidines	Linezolid	30	19	18
Cephalosporins	Cefotaxim	0	0	0
Trimethoprim	Trimethoprim	0	0	0
Sulphonamides	Sulphonamides	0	0	0

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

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

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

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

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

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

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

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

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

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

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

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

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 ENTEROBACTER SAKAZAKII

4.1.1 General evaluation of the national situation

4.1.2 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
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months	CAO FFSD	Single	10 grams	44	0	0
Infant formula - dried	CAO FFSD	Single	10 grams	117	0	0

4.2 HISTAMINE

4.2.1 General evaluation of the national situation

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

4.3.2 Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Monitoring system

Sampling strategy

There is no direct sampling strategy, samples containing more than 100.000 coagulase positive staphylococci/gram are tested for the presence of enterotoxin.

Only those product groups are routinely tested for coagulase positive staphylococci, for which there is a criterion in 2073/2005/EC.

Type of specimen taken

milk products

Definition of positive finding

If ELFA test shows a positive result, the product is considered to be positive.

Diagnostic/analytical methods used

Validated detection method of the CRL based on VIDAS enterotoxin test is used.

5. FOODBORNE

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

A. Foodborne outbreaks

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

Data on food-borne outbreaks are collected in Hungary since 1931 by legal background. There are three surveillance systems for identifying/recognition of food-borne outbreaks (the obligatory report of a physician / a food business operator/ a drinking water supplier / a representative of an institution about an outbreak; the increasing number of cases in the communicable disease reporting system/ the increasing number of laboratory confirmed cases). The reporting systems of human cases belong to the National Public Health and Medical Officer's Service. 1st January 2007 an organisation for the control of food chain was established (Central Agricultural Office), which is working under the supervision of Ministry of Agriculture. Based on the new legal background, the official control of food chain is the task of the veterinary and food control service of this organisation, and this task involves the foodborn outbreak investigation, collection and analysis of data obtained – in all the cases, when the outbreak is general or the supposed product is produced by the food industry and/or catering, and not located to a household. The household outbreaks are investigated by the public health authority. The investigation of an outbreak is usually initiated by the information provided by the public health service on the human cases. The two authorities are cooperating in the whole process of investigation.

Description of the types of outbreaks covered by the reporting:

Outbreak: At least two cases of the disease with epidemiological link (exposed by the same food)/The number of cases are higher than expected surveillance data. It is not necessary to identify the agent in the food sample.

Household outbreak: At least two cases of a foodborne disease in the same household, exposed by the same food.

General outbreak: At least two cases of a foodborne disease in the same institute (school, kindergarten, hospital etc.) exposed by the same food.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

Based on the data collected by Central Agricultural Office (CAO), there were 59 general outbreaks with strong or weak evidence in 2009 in Hungary, and there were 1409 cases linked to this outbreaks. As CAO registered, 78 patients were hospitalized. The number of outbreaks was slightly more than in 2009, but the number of cases markedly increased compared to the previous year. 56% (33) of outbreaks caused by *Salmonella* spp., 5% (3) *Bacillus* spp., 3,4% (2) *C.perfringens*, 11,8% (7) norovirus, and 14 (23,7%) outbreak had unknown etiology. The proportion of *Salmonella* atiology increased compared to 2009, 1/3 of outbreaks caused by facultativ agents.

National Centre for Epidemiology (NCE) and National Institute for Food Safety and Nutrition (NIFSN) collected data on household outbreaks and on event caused by mushrooms as well.

Altogether 299 general and household foodborne outbreaks (two or more linked cases) were registered in Hungary in 2010. 1970 cases were linked to this 299 outbreaks, among them 421 (21,4%) hospitalised cases. The number of outbreaks and cases increased by 50% mainly because of mushroom-outbreaks (the consequence of the very wet weather in 2010). The number of hospitalised cases was two times higher than in 2009. Two patient have died because of mushroom poisoning.

The etiological stucture of outbreaks was the following: 54,2% (162) salmonellosis, 9,7% (29) campylobacteriosis, 2,7% virus (7 norovirus, 1 tickborne encephalitis virus), 2% (6) *Bacillus* spp. (5 *B.cereus*, 1 *B.subtilis*), 0,7% (2) *C.perfringens*, 24,7% (74) mushroom, 6% (18) unknown. There were

salmonellosis outbreaks (+26%), and ten times more mushroom outbreaks than in 2009. The number of other type of outbreaks slightly decreased or stagnated. The proportion of salmonella (2009: 64%, 2008: 69%) and campylobacter outbreaks decreased (2009: 16,6%, 2008: 16,5%), and mushroom emerged (2009: 3,5%).

30 outbreaks (10%) had strong evidence for being food-borne (16 *Salmonella* spp., 6 *Bacillus* spp., 1 *C.perfringens*, 4 norovirus, 1 tickborne encephalitis virus, 2 unknown).

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

Salmonellosis

NCE registered 6250 sporadic salmonellosis cases or linked to outbreaks, it is a slightly increase (+3,7%) compared to 2009 (6029). The number of outbreaks were 170, less than in 2009 (178; -4,5%). The most frequent serotypes were: *S.Enteritidis* (55,6%, 2009: 60,1%, 2008: 72,7%); *S.Typhimurium* (16,8%, 2009: 16,9%, 2008: 10,5%); *S.Infantis* (6,9%, 2009: 7,3%, 2008: 4,5%), followed by monophasic *S.Typhimurium* 1.4.[5].12:i:- (3,1%), *S.Bovismorbificans* (1,6%) and *S.Kentucky* (0,8%). Continued the decreasing of the dominance of *S.Enteritidis*.

Around 1000 *S.Enteritidis* strains (989) with human origin were phage typed, the most frequent phage type was PT2(36,4%) , followed by PT21 (15,3%), and PT8 (14,8%), PT4 (9,6%), PT51 (6,9%).

Around half of the *S.Typhimurium* strains (544) were phage typed, 27% were PT 193, 18,7% were PT195.

Campylobacteriosis

The campylobacteriosis was the most frequent zoonosis in 2010 in Hungary. NCE registered 7201 cases and 55 outbreaks, which is a 10% increase compared to 2009 (6583 cases, 50 outbreaks). Supposedly the reason of this increase is the change of media which is used by most of the human laboratory in Hungary to culture the agent from the stool. 17,5% of strains were *C.jejuni*, 2,9% were *C.coli*, 1% were *C.lari*, and 78,6% were not typed.

Table Foodborne Outbreaks: summarised data

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Salmonella - S. Typhimurium	13	36	11	0	2	15
Salmonella - S. Enteritidis	109	1022	119	0	14	123
Salmonella - Other serovars	24	73	11	0	0	24
Campylobacter	29	66	11	0	0	29
Listeria - Listeria monocytogenes	0	0	0	0	0	0
Listeria - Other Listeria	0	0	0	0	0	0
Yersinia	0	0	0	0	0	0
Escherichia coli, pathogenic -	0	0	0	0	0	0
Bacillus - B. cereus	0	0	0	0	5	5
Bacillus - Other Bacillus	0	0	0	0	1	1
Staphylococcal enterotoxins	0	0	0	0	0	0
Clostridium - Cl. botulinum	0	0	0	0	0	0
Clostridium - Cl. perfringens	1	10	0	0	1	2
Clostridium - Other Clostridia	0	0	0	0	0	0
Other Bacterial agents - Brucella	0	0	0	0	0	0

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Other Bacterial agents - Shigella	0	0	0	0	0	0
Other Bacterial agents - Other Bacterial	0	0	0	0	0	0
Parasites - Trichinella	0	0	0	0	0	0
Parasites - Giardia	0	0	0	0	0	0
Parasites - Cryptosporidium	0	0	0	0	0	0
Parasites - Anisakis	0	0	0	0	0	0
Parasites - Other Parasites	0	0	0	0	0	0
Viruses - Norovirus	3	98	14	0	4	7
Viruses - Hepatitis viruses	0	0	0	0	0	0
Viruses - Other Viruses	0	0	0	0	1	1
Other agents - Histamine	0	0	0	0	0	0
Other agents - Marine biotoxins	0	0	0	0	0	0
Other agents - Other Agents	74	228	219	2	0	74
Unknown agent	16	198	2	0	2	18

Table Foodborne Outbreaks: detailed data for Bacillus

Please use CTRL for multiple selection fields

B. cereus

Value

FBO Code	5.
Number of outbreaks	4
Number of human cases	177
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

B. cereus

Value

FBO Code	36.
Number of outbreaks	1
Number of human cases	53
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

B. subtilis

Value

FBO Code	37.
Number of outbreaks	1
Number of human cases	84
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Clostridium

Please use CTRL for multiple selection fields

C. perfringens

Value

FBO Code	10.
Number of outbreaks	1
Number of human cases	123
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Temporary mass catering (fairs, festivals)
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Enteritidis - PT 2

Value

FBO Code	13/NCE
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Sweets and chocolate
More food vehicle information	tiramisu
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium

Value

FBO Code	40.
Number of outbreaks	2
Number of human cases	10
Number of hospitalisations	8
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Retail sale outlet
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	Salmonella Goldcoast, Salmonella Infantis
Additional information	

S. Enteritidis

Value

FBO Code	32.
Number of outbreaks	1
Number of human cases	30
Number of hospitalisations	10
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	PT 17

S. Enteritidis - PT 4

Value

FBO Code	6/NCE
Number of outbreaks	1
Number of human cases	22
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	vegetables with mayonnese
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 6

Value

FBO Code	17/NCE
Number of outbreaks	1
Number of human cases	17
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Cereal products including rice and seeds/pulses (nuts, almonds)
More food vehicle information	gritz in sweet milk
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 21

Value

FBO Code	19.
Number of outbreaks	1
Number of human cases	44
Number of hospitalisations	12
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 21

Value

FBO Code	7/NCE
Number of outbreaks	1
Number of human cases	18
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Cereal products including rice and seeds/pulses (nuts, almonds)
More food vehicle information	noodle
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

Value

FBO Code	5/NCE
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	noodle with eggs and letcho/raratuy with eggs
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 2

Value

FBO Code	33.
Number of outbreaks	5
Number of human cases	79
Number of hospitalisations	10
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

Value

FBO Code	18.
Number of outbreaks	1
Number of human cases	42
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

Value

FBO Code	22.
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Unknown agent

Please use CTRL for multiple selection fields

Unknown

Value

FBO Code	14/NCE
Number of outbreaks	1
Number of human cases	24
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	chicken meat wit creame
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

Value

FBO Code	3/NCE
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	cold buffet, vegetables with mayonese, stuffed eggs, etc
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Temporary mass catering (fairs, festivals)
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Viruses

Please use CTRL for multiple selection fields

Flavivirus

Value

FBO Code	4/NCE
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Dairy products (other than cheeses)
More food vehicle information	raw goat milk
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	23.
Number of outbreaks	1
Number of human cases	31
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Residential institution (nursing home, prison, boarding school)
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	6.
Number of outbreaks	1
Number of human cases	25
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Sweets and chocolate
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	1/NCE
Number of outbreaks	1
Number of human cases	83
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	crescent with poppy seeds in milk and eggs
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	9.
Number of outbreaks	1
Number of human cases	31
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	