

## GERMANY

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

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

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

## IN 2010

## INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Germany

Reporting Year:

Laboratory name	Description	Contribution
Federal institute for Risk Assessment (BfR)	PO Box 33 0013 D 14191 Berlin Federal institution independent from political influences, place of national reporting officer	Data on zoonotic agents from food, animals and feed reported by the federal states authorities
National Veterinary Reference Laboratories in the BfR	Federal Institute for Risk Assessment	Salmonella, Campylobacter, E. coli VTEC, koagulase positive Staphylococci, Trichinella: antimicrobial resistance, phage types and serotyping and species identification
Unit for Foodborne Outbreaks in the BfR	Federal Institute for Risk Assessment	Foodborne outbreak data - food related data
Robert Koch Institute	Robert Koch Institute, Nordufer 20, D 13353 Berlin (Federal Institution)	Foodborne outbreak data - human related data
Friedrich Loeffler - Institute	Institute for Epidemiology, Seestr. 55, D 16868 Wusterhausen	Rabies, brucellosis, tuberculosis and salmonellosis in animals

## 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 Germany during the year 2010 .

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

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

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

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

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

# List of Contents

1	ANIMAL POPULATIONS	1
2	INFORMATION ON SPECIFIC ZOOSES AND ZONOTIC AGENTS	4
2.1	SALMONELLOSIS	5
2.1.1	General evaluation of the national situation	5
2.1.2	Salmonella in foodstuffs	7
2.1.3	Salmonella in animals	30
2.1.4	Salmonella in feedingstuffs	47
2.1.5	Salmonella serovars and phagetype distribution	52
2.1.6	Antimicrobial resistance in Salmonella isolates	117
2.2	CAMPYLOBACTERIOSIS	402
2.2.1	General evaluation of the national situation	402
2.2.2	Campylobacter in foodstuffs	402
2.2.3	Campylobacter in animals	413
2.2.4	Antimicrobial resistance in Campylobacter isolates	416
2.3	LISTERIOSIS	439
2.3.1	General evaluation of the national situation	439
2.3.2	Listeria in foodstuffs	439
2.3.3	Listeria in animals	447
2.4	E. COLI INFECTIONS	449
2.4.1	General evaluation of the national situation	449
2.4.2	Escherichia coli, pathogenic in foodstuffs	449
2.4.3	Escherichia coli, pathogenic in animals	454
2.5	TUBERCULOSIS, MYCOBACTERIAL DISEASES	458
2.5.1	General evaluation of the national situation	458
2.5.2	Mycobacterium in animals	458
2.6	BRUCELLOSIS	462
2.6.1	General evaluation of the national situation	462
2.6.2	Brucella in animals	462
2.7	YERSINIOSIS	465
2.7.1	General evaluation of the national situation	465
2.7.2	Yersinia in foodstuffs	465
2.7.3	Yersinia in animals	468
2.8	TRICHINELLOSIS	470
2.8.1	General evaluation of the national situation	470
2.8.2	Trichinella in animals	470
2.9	ECHINOCOCCOSIS	476
2.9.1	General evaluation of the national situation	476
2.9.2	Echinococcus in animals	477
2.10	TOXOPLASMOSIS	478
2.10.1	General evaluation of the national situation	478

2.10.2 Toxoplasma in animals	478
2.11 RABIES	479
2.11.1 General evaluation of the national situation	479
2.11.2 Rabies in humans	480
2.11.3 Lyssavirus (rabies) in animals	481
2.12 STAPHYLOCOCCUS INFECTION	482
2.12.1 General evaluation of the national situation	482
2.12.2 Staphylococcus in foodstuffs	482
2.12.3 Staphylococcus in animals	486
2.13 Q-FEVER	489
2.13.1 General evaluation of the national situation	489
2.13.2 Coxiella (Q-fever) in animals	489
3 INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL	492
3.1 ESCHERICHIA COLI, NON-PATHOGENIC	493
3.1.1 General evaluation of the national situation	493
3.1.2 Antimicrobial resistance in Escherichia coli, non-pathogenic	493
3.2 ENTEROCOCCUS, NON-PATHOGENIC	512
3.2.1 General evaluation of the national situation	512
3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates	512
4 INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS	519
4.1 ENTEROBACTER SAKAZAKII	520
4.1.1 General evaluation of the national situation	520
4.1.2 Enterobacter sakazakii in foodstuffs	520
4.2 HISTAMINE	521
4.2.1 General evaluation of the national situation	521
4.3 STAPHYLOCOCCAL ENTEROTOXINS	521
4.3.1 General evaluation of the national situation	521
4.3.2 Staphylococcal enterotoxins in foodstuffs	521
5 FOODBORNE OUTBREAKS	523

## 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

Statistisches Bundesamt 2011. Fachserie 3, Reihe 4.2, Schlachtung und Fleischerzeugung

Statistisches Bundesamt 2011. Fachserie 3, Reihe 4.1, Rinder- und Schweinebestand

### Definitions used for different types of animals, herds, flocks and holdings as well as the types covered by the information

Dairy cows and heifers includes only dairy cows after calving

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

Holdings of pigs and cattle decreased between 2008 and 2009, while the number of pigs slightly increased.

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 <sup>1)</sup>			3755350	2010	12761126	2010	183977	2010
Goats	- in total <sup>2)</sup>			23458	2010				
Pigs	- in total <sup>3)</sup>			58413677	2010	26900800	2010	32900	2010
Sheep	- in total <sup>4)</sup>			157203	2010				
Sheep and goats	- unspecified <sup>5)</sup>					3025264	2010	155526	2010

## Comments:

- <sup>1)</sup> Nov.2010, only animals from Germany  
<sup>2)</sup> Nov.2010, only animals from Germany  
<sup>3)</sup> Nov.2010, only animals from Germany  
<sup>4)</sup> Nov.2010, only animals from Germany  
<sup>5)</sup> in total



## 2. INFORMATION ON SPECIFIC ZONOSSES AND ZOOBOTIC 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

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

The data on the control of Salmonella in foods (surveillance) were reported by the authorities or institutes of the federal states ('federal laender'). Questionnaires for the laender institutions can be downloaded from [www.bfr.bund.de/cd/299](http://www.bfr.bund.de/cd/299). The filled forms were sent to the reporting officer at the BfR. After validation the data were added to a database automatically. The evaluation is standardised by the database system and the results are used for the prevalence tables and for the serovar tables reported under 'surveillance'.

#### Additional information

##### Antimicrobial resistance

For the MIC determination the broth microdilution method was used following CSLI guidelines (M07-A8, M100-S19). A European plate format (EUMVS) was used and 14 different antimicrobial agents were tested. Minimum inhibitory concentrations were evaluated using epidemiological cut off values ([www.eucast.org](http://www.eucast.org)).

Antimicrobial resistance was reported for Salmonella spp. including all isolates from all serovars and specifically for S. Typhimurium and S. Enteritidis because they are the most prevalent serovars among humans. Moreover, the most frequent serovars from the respective origins were reported.

##### Serotyping and Phagotyping at the NRL

In accordance with §2 para 1, Nos. 10, 11 Act establishing BfR (BfRG) the National Reference Laboratory for Salmonella (NRL-Salm) receives Salmonella isolates from animals, food, feed and the environment isolated in institutions of all Federal States for further differentiation or confirmation of results. In relation to this task a considerable number of Salmonella isolates was sent to the NRL-Salm. Isolates were serotyped according to Grimont and Weil (2007). Phagotyping was done for S. Enteritidis and S. Typhimurium.

##### References

WARD, L.R.; DE SA, J.D.H.; ROWE, B.: A PHAGE-TYPING SCHEME FOR SALMONELLA ENTERITIDIS. EPIDEMIOLOGY AND INFECTION (1987) 99 (2): 291-294

ANDERSON, E.S., WARD, L.R., DE SAXE, M.J., DE SA, J.D.H.: Bacteriophage-typing designations of Salmonella Typhimurium. The Journal of Hygiene (London) (1977) 78 (2): 297-300

Grimont, P.A. and Weill, FX (2007): Antigenic formulae of the Salmonella serovars, 9th edition. IN WHO collaborating Centre for Reference and Research on Salmonella, Institute Pasteur, 75724 Paris, Cedex 15, France.



## 2.1.2 Salmonella in foodstuffs

### A. Salmonella spp. in pig meat and products thereof

#### Monitoring system

##### Sampling strategy

###### At slaughterhouse and cutting plant

All reasons for conducting bacteriological investigations of pig carcasses at the abattoir in routine surveillance were included.

ELISA-testing of meat juice samples was reported by three Federal Laender including 28.000 pigs.

###### At retail

In 2010, prevalence data were derived from surveillance. Data concerning serovar and phage type distributions were additionally derived from the National Reference Laboratory for Salmonella.

###### A: Surveillance

Surveillance data were derived from the routine surveillance as planned samples carried out by the competent authorities of the Federal Laender according to Reg. (EC) 882/2004 (see general chapter).

#### Results of the investigation

##### Surveillance

The Salmonella rate detected in samples of carcasses of swine at the abattoir was 1.0 % (2009: 0.6 %).

Among isolates from slaughtered swine, *S. Typhimurium* was isolated in 39 % of the typed Salmonella, 12 % were *S. 4,[5],12:i:-*.

ELISA examinations of meat juice from swine at slaughter revealed a presence of Salmonella antibody titres in 3.8 % of slaughtered animals (2009: 4.0 %).

Salmonella were detected in 2.0 % of the meat from pig samples tested at retail (2009: 1.8 %). Again, *S. Typhimurium* was isolated as the most frequent serovar from pork (40 % of Salmonella). *S. Enteritidis* was not isolated from meat from pig.

In minced raw pig meat (intended to be eaten cooked) a decrease of the Salmonella rate to 0.6 % (2009: 1.6 %) was detected. Minced meat (intended to be eaten raw) showed a decrease to 3.9 % (2009: 4.3 %). Products made from raw meat (intended to be eaten cooked) showed a slightly increase to 1.9 % (2009: 1.8 %). In heat treated meat products of pig meat (cooked, ready-to-eat) Salmonella were found in 0.4 % of the samples (2009: 0.2 %). Salmonella were isolated from 1.2 % (2009: 0.5 %) of stabilized meat products made from pig meat.

Among the 178 Salmonella isolates from pig meat submitted to the NRL for Salmonella in 2010, *S. Typhimurium* (36.5 %) and *S. 4,[5],12:i:-* (30.9 %) predominated. *S. Derby* was identified in 9.6 % of the isolates. The isolates of *S. Typhimurium* were mainly phage types DT104B low (32.3 %) and DT104L (16.9 %). The phage types of the monophasic variant of *S. Typhimurium* were predominantly DT193, PT-

(80 %). As in isolates from pigs, DT120, PTU042 (5.5 %) and DT104B low (3.6 %) were also identified in the monophasic strains. *S. Enteritidis* was not identified from pork.

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

The rate of positive carcasses increased slightly in comparison to 2009. It has to be considered that the carcasses were not sampled randomly but also in case of suspicion.

The highest proportion of positive meat samples was identified in minced meat. The latter is remarkable as minced pig meat is also consumed raw in Germany.

Results obtained in the context of surveillance and monitoring were similar in 2009.

The proportion of positive pork samples from surveillance was similar to 2009. In 2009 is the lowest proportion during the last 5 years (Range 2005-2008 2.5 to 3.0 %) had been observed. Again in 2010 the rate of positive samples (2.0 %) was below the range reported for 2005 to 2008.

The serovar and phage type pattern of the *Salmonella* isolates from pork submitted to the NRL was similar to that observed in isolates from pigs.

## B. Salmonella spp. in bovine meat and products thereof

### Monitoring system

#### Sampling strategy

##### At slaughterhouse and cutting plant

In the reports for bacteriological meat examination (Bakteriologische Fleischuntersuchungen BU) in 2009 at slaughterhouses, all reasons for conducting these examinations have been summarized.

##### At retail

Prevalence data were derived from surveillance. Data concerning serovar and phage type distributions were additionally derived from the National Reference Laboratory for Salmonella.

Surveillance data were derived from the routine surveillance as planned samples carried out by the competent authorities of the Federal Laender according to Reg. (EC) 882/2004 (see general chapter).

### Results of the investigation

#### Surveillance

The proportion of cattle carcasses at the abattoir that were positive for Salmonella was 0.3 % (2009: 0.3 %). Among isolates from slaughtered cattle, *S. Typhimurium* was found in 6 samples (35 % of Salmonella), in 4 samples (24 %) *S. 4,[5],12:i:-* was isolated. *S. Enteritidis* was not isolated in 2010.

The detection rate of Salmonella in beef samples at retail was 0.7 % (2009: 0.7 %). Minced meat (intended to be eaten raw) showed 1.0 % positives (2009: 0.7 %) with 3 *S. Typhimurium* and 1 *S. Enteritidis* findings. In raw meat products made from beef (intended to be eaten cooked) Salmonella could not be isolated (2009: 3.9 %). No Salmonella was isolated from heat treated beef meat products (cooked, ready-to-eat) and stabilized meat products as in the previous year.

Among the 42 Salmonella isolates from bovine meat submitted to the NRL Salmonella 22 were either *S. Typhimurium* (7) of various phage types or its monophasic variant (15). All monophasic isolates were DT193, PT-. Dublin (2), and *S. Derby* (6) were infrequent. *S. Enteritidis* was only identified in one isolate (phage type PT35).

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

The proportion of positive samples of bovine meat is consistently low over the years. Monitoring data from 2009 indicated, that this is similar for veal.

Salmonella serovars isolated from beef are similar to those isolated from cattle.

## C. Salmonella spp. in broiler meat and products thereof

### Monitoring system

#### Sampling strategy

##### At retail

In 2010, data on broiler meat were collected in the framework of surveillance. Data concerning serovar and phage type distributions were additionally also derived from the National Reference Laboratory for Salmonella.

Surveillance data were derived from the routine surveillance as planned samples carried out by the competent authorities of the Federal Laender according to Reg. (EC) 882/2004 (see general chapter).

### Results of the investigation

#### A. Surveillance

Broiler meat at retail: In 2010, the total rate of positive broiler meat samples collected in the framework of surveillance increased slightly to 9.0 % (2009: 6.2 %). *S. Enteritidis* could be isolated in 33 % of the *Salmonella* isolates (2009: 8 %). *S. Paratyphi B*, mostly reported as var. Java, i.e. dT+, was isolated from broiler meat in 13 % of the serotyped *Salmonella* isolates (2009: 36 %). In 2 isolates (3 %) *S. 4,[5],12:i:-* was identified, *S. Livingstone* in 11% and *S. Infantis* in 5 % of the *Salmonella* isolates.

Ready-to-eat meat products containing broiler meat at retail: The reports received from the Federal Laender confirmed a low *Salmonella* rate of 0.4 % (2009: 0.6 %).

Broiler meat intended to be eaten cooked, was reported with 4.4 % *Salmonella* findings (2009: 6.1 %).

Among the 113 isolates from broiler meat submitted to the NRL four serovars predominated: *S. Enteritidis* (10.6 %), *S. Paratyphi B* (dT+)(23.9 %), and *S. Senftenberg* (14.6 %). *S. Typhimurium* was only detected once, its monophasic variant 5 times (4.4 %). Isolates of *S. Enteritidis* were predominantly phage types PT4 (5/12).

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

Data from surveillance indicated a slight increase in the contamination of fresh broiler meat with *Salmonella* spp.

Over the five year period in surveillance, contamination levels in broiler meat and products thereof have varied between 6.4 and 10,3 % with the lowest rates in 2009.

Overall results indicate that broiler meat and products thereof can be a source of human *Salmonella* infections and that *S. Enteritidis* can still be found in broiler meat.

## D. Salmonella spp. in eggs and egg products

### Monitoring system

#### Sampling strategy

For sampling in the framework of surveillance see chapter Salmonella spp. in food.

In 2010 table eggs were also examined at retail in a national monitoring programme. 1440 samples were distributed over the federal states based on their respective share of the national population. Pools of 10 eggs were to be examined. Shells and contents were examined separately.

### Results of the investigation

#### Surveillance

In the framework of surveillance, the number of examinations of eggs for human consumption reported has decreased in comparison to the previous year. In 2010, the Salmonella rate was 0.19 % in samples collected under the sampling plan at retail (2009: 0.31 %). As in the previous year, *S. Enteritidis* was most frequently detected in eggs. In 2010, the relative share of *S. Enteritidis* was 67 % of the serotyped Salmonella (2009: 79 %).

In the egg shells investigated 0.13 % of the samples were Salmonella positive (2009: 0.28 %). From egg yolk, no Salmonella could be isolated.

#### Monitoring

In 2010, in the framework of monitoring 0.7 % of the examined samples of pooled egg shells (1443 pools of 10 eggs) were positive for Salmonella. Assuming 10 eggs per pool and only one positive egg in each positive pools this means 0.07% positive eggs. All typed isolates were *S. Enteritidis*. Phage types PT4 (4 isolates) and PT8 (2 isolates) dominated. None of the 1427 samples of egg yolk was positive for Salmonella.

There was no significant difference between eggs from Germany 8/1014 egg shell samples or from other countries (2/429). Likewise there was no difference between the different housing systems.

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

With respect to monitoring, the results are in line with the results from surveillance concerning the low detection rate, the absence of Salmonella in egg yolk and the predominance of *S. Enteritidis* in table eggs.

Results differ from a survey carried out in 2008. In that survey, of 4 positive pools 3 were positive on shells and 2 positive in the content. One of those was positive in both samples.

With the low number of positive samples the absence of significant differences between housing systems has to be considered carefully. It cannot be concluded that such differences do not exist.



## E. Salmonella spp. in turkey meat and products thereof

### Monitoring system

#### Sampling strategy

##### At retail

Prevalence data were derived from two distinct systems, i.e. surveillance and monitoring. Data concerning serovar and phage type distributions were additionally also derived from the National Reference Laboratory for Salmonella.

##### A: Surveillance

Surveillance data were derived from planned samples collected within routine surveillance carried out by the competent authorities of the Federal Länder according to Reg. (EC) 882/2004 (see general chapter).

##### B: Monitoring

Monitoring data were collected in the framework of a national sampling plan. Turkey carcasses (n=384) were to be sampled at the end of the slaughter process collecting neck skin samples. Samples were assigned to the Federal Länder according to their slaughterhouse capacity for turkeys.

At retail, the total target sample size of 384 for fresh turkey meat was assigned to the Federal Länder according to their population.

In both programs, independent samples had to be collected at random. A sample was considered positive if any type of Salmonella spp. was detected in the 25 g sample using the bacteriological method: ISO 6579:2002.

### Results of the investigation

##### A: Surveillance

Turkey meat was reported positive for Salmonella in 5.9 % of samples at retail in 2010 (2009: 8.6%). In meat from turkeys *S. Saintpaul*, *S. Kentucky* and *S. Typhimurium* were the most frequent serovars with 21%, 17% and 14% of the isolated serovars, respectively. *S. Enteritidis* was 2010 isolated from meat from turkeys in one case.

##### B: Monitoring

In 2010, 17.2 % of turkey carcasses at the abattoir were positive for Salmonella. Among the isolates *S. Saintpaul* (24.2 %), *S. Typhimurium* (15.2 %) and its monophasic variant (7.6 %) and *S. Indiana* (16.7 %) predominated. Other frequent serovars were *S. Hadar* (9.1 %) and *S. Schwarzengrund* (6.1 %).

Turkey meat at retail was found positive for Salmonella in 5.5 % of the samples of fresh meat, i.e. in a similar frequency as in 2009 (5.8 %). The predominant serovars were *S. Saintpaul* (16 /44 isolates), *S. Newport* (6/44), *S. Typhimurium*, *S. Kentucky*, and *S. Bredeney* (5 isolates each). The monophasic *S. Typhimurium* strain *S. 1,4,[5],12:i:-* was identified in 1 isolate.

Regarding phage types of *S. Typhimurium*, DT104L dominated in both monitoring programs (2 and 3 isolates respectively). However the overall number of phagetyped isolates was limited (15)

C: Among the 101 isolates from turkey meat submitted to the NRL for Salmonella *S. Typhimurium* (34.7 %) and its monophasic variant (13.9 %) predominated while *S. Saintpaul* was detected less frequently than in 2009 (8.9 vs. 23.1 %). Other frequent serovars included *S. Newport* (9.9 %), and *S. Bredeney* (7.9 %). *S. Enteritidis* was identified in 1 isolates (1 %).

Among the *S. Typhimurium* isolates, phage type DT104L dominated (77 %), together with DT001 (17 %). The monophasic isolates were DT193, PT- with one exception that was non typeable.

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

The proportion of positive samples reported in the context of surveillance was reduced in comparison to 2009 and was the lowest rate observed since 2005 (Range 2005-2009: 6.0 to 10.7 %).

The results obtained in the framework of the monitoring were similar.

The serovar pattern identified by the different approaches was similar, but also showed some differences.

Both results indicate that turkey meat can be a source of human Salmonella infections. However, only few of the isolates were from the two serovars predominating in human medicine i.e. *S. Typhimurium* (incl. its monophasic variant) and *S. Enteritidis*.

## F. Salmonella spp. in food

### Monitoring system

#### Sampling strategy

Examinations at the slaughterhouse:

Bacteriological meat examinations (BU) are carried out when certain suspicions arise during slaughter, when parts that should undergo meat examination are missing or when the examination is delayed or no longer possible. The procedure for the hygiene performance during slaughtering and of the bacteriological meat examinations is set out in the German Order AVV LmH, Annex 4, 3. The procedure for the examination is set by Reg (EC) No. 854/2004, Annex I, II No.2.

Foods:

Samples of foods on the market are regularly collected by official food control staff (5 samples per 1,000 inhabitants) and examined for bacterial contamination in accordance with the Official Collection of Methods of Examination under Art. 64(1) of the Food and Feed Code (LFGB) (up to 2004: Art. 35 of the Foods and Other Commodities Act (LMBG)). Sampling is performed in accordance with Art. 10 and 11 of the General administrative provisions on the principles for carrying out the official surveillance of food and wine law provisions (AVV-RUEb) and is undertaken in a risk-oriented manner as planned samples (regarding Reg (EC) no. 882/2004). The methods to be used according to Art. 64(1) of the Foods and Other Commodities Act, e.g. for Salmonella, largely correspond to those described in ISO 6579.

As in 2009, for 2010 a specific national sampling plan covering food items but also primary production was developed. It included objective sampling of turkey carcasses at slaughter and sampling of turkey meat and table eggs at retail (see specific chapters). Details on methods and results are described in the respective chapters.

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

In the reports for bacteriological meat examination (Bakteriologische Fleischuntersuchungen BU) in 2010 at slaughterhouses, all reasons for conducting these examinations have been summarized. Bacteriological meat examinations of meat animals were positive in 0.59 % of all samples tested (2009: 0.44 %).

Red meat in all planned samples was investigated 2010 with 4103 samples and with 1.7 % positive samples as result. 34 % of the serotyped strains were S. Typhimurium, further 21 % were the monophasic variant of S. Typhimurium followed by S. London and S. Infantis.

## G. Salmonella spp. in food - Meat from other poultry species

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

In 2010 at retail Salmonella was detected in meat from ducks at retail (7.1 %, 2009: 7.7 %) and meat from geese (12.2 %, 2009: 14.7 %). *S. Enteritidis* was not isolated from the meat of ducks and of geese, *S. Typhimurium* was isolated from meat from geese (80 % of the serotyped strains).

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. 1,4,[5],12:i:-	S. Paratyphi B var. Java
Meat from broilers (Gallus gallus) - fresh - at slaughterhouse	bact. meat inspection at slaughterhouse	Single	25g	6	0					
Meat from broilers (Gallus gallus) - fresh - at processing plant	official food surveillance	Single	25g	111	7			4		3
Meat from broilers (Gallus gallus) - fresh - at retail	official food surveillance	Single	25g	713	64	20		34	2	8
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	36	6			6		
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail	official food surveillance	Single	25g	137	6	1		5		
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	13	0					
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	265	1			1		
Meat from duck - at slaughterhouse	bact. meat inspection at slaughterhouse	Single	25g	1	0					
Meat from duck - at retail	official food surveillance	Single	25g	84	6			6		
Meat from geese - at retail	official food surveillance	Single	25g	41	5		4	1		

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. 1,4,[5],12:i:-	S. Paratyphi B var. Java
Meat from turkey - fresh - at slaughterhouse	bact. meat inspection at slaughterhouse	Single	25g	6	0					
Meat from turkey - fresh - at processing plant	official food surveillance	Single	25g	253	48		4	43		1
Meat from turkey - fresh - at retail	official food surveillance	Single	25g	942	56	1	6	46	2	1
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	29	0					
Meat from turkey - meat preparation - intended to be eaten cooked - at retail	official food surveillance	Single	25g	104	6		1	5		
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	4	0					
Meat from turkey - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	70	0					
Meat from turkey - carcass - chilled - at slaughterhouse - Monitoring - official sampling - objective sampling (Skin samples from carcasses)	Monitoring	Single	25g	360	62			62		
Meat from turkey - fresh - at retail - Monitoring - official sampling - objective sampling	Monitoring	Single	25g	675	37			37		

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from cows' milk - at processing plant	official food surveillance	Single	25g	646	0			
Cheeses made from cows' milk - at retail	official food surveillance	Single	25g	1756	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g	47	0			
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g	334	0			
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g	23	1			1
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g	38	1			1
Cheeses made from goats' milk - at processing plant	official food surveillance	Single	25g	56	0			
Cheeses made from goats' milk - at retail	official food surveillance	Single	25g	87	0			
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g	13	0			
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g	13	0			
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g	20	0			

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g	3	0			
Cheeses made from sheep's milk - at processing plant	official food surveillance	Single	25g	42	0			
Cheeses made from sheep's milk - at retail	official food surveillance	Single	25g	62	0			
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g	4	0			
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g	4	0			
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g	7	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at processing plant <sup>1)</sup>	official food surveillance	Single	25g	136	0			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - at retail <sup>2)</sup>	official food surveillance	Single	25g	395	0			
Dairy products (excluding cheeses) - ice-cream - at processing plant	official food surveillance	Single	25g	3346	0			
Dairy products (excluding cheeses) - ice-cream - at retail	official food surveillance	Single	25g	5171	0			
Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant	official food surveillance	Single	25g	159	0			



Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Dairy products (excluding cheeses) - milk powder and whey powder - at retail	official food surveillance	Single	25g	77	0			
Milk, cows' - pasteurised milk - at processing plant	official food surveillance	Single	25g	263	0			
Milk, cows' - pasteurised milk - at retail	official food surveillance	Single	25g	746	0			
Milk, cows' - raw <sup>3)</sup>	official food surveillance	Single	25g	13	0			
Milk, cows' - raw - intended for direct human consumption <sup>4)</sup>	official food surveillance	Single	25g	191	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products <sup>5)</sup>	official food surveillance	Single	25g	359	0			
Milk, cows' - raw - Monitoring - official sampling - objective sampling <sup>6)</sup>	-	---	-	0	0			
Milk, cows' - raw - intended for direct human consumption - Monitoring - official sampling - objective sampling <sup>7)</sup>	Monitoring	Single	25g	30	0			
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Monitoring	Single	25g	328	0			

## Comments:

- 1) all butter
- 2) all butter
- 3) at farm (sold at farm with recommendation for heating of 10 min.)

## Table Salmonella in milk and dairy products

### Comments:

4) certified milk

5) all milk

6) -

7) certified

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-17	Milk, cows' - raw - Monitoring - official sampling - objective sampling	Units tested	328	0
	Milk, cows' - raw - Monitoring - official sampling - objective sampling	Sampling unit	Single	---
	Milk, cows' - raw - Monitoring - official sampling - objective sampling	Comment	at farm	-
	Milk, cows' - raw - Monitoring - official sampling - objective sampling	Source of information	Monitoring	-
	Milk, cows' - raw - Monitoring - official sampling - objective sampling	Sample weight	25g	-
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Source of information		Monitoring
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Sample weight		25g
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Sampling unit		Single

Date of Modification	Row name	Column name	Old value	New value
2012-01-17	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Units tested		328
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at farm	Total units positive for Salmonella		0
	Milk, cows' - raw - intended for direct human consumption - Monitoring - official sampling - objective sampling	Comment	at farm	certified

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Crustaceans - at processing plant	official food surveillance	Single	25g	138	1			1
Crustaceans - at retail	official food surveillance	Single	25g	726	3		1	2
Egg products - at processing plant	official food surveillance	Single	25g	21	0			
Egg products - at retail	official food surveillance	Single	25g	71	0			
Eggs - table eggs - at packing centre	official food surveillance	Single	eggs	1171	0			
Eggs - table eggs - at retail	official food surveillance	Single	eggs	7969	15	10		5
Fishery products, unspecified - at processing plant	official food surveillance	Single	25g	502	1			1
Fishery products, unspecified - at retail	official food surveillance	Single	25g	2723	4		1	3
Fruits and vegetables - precut	official food surveillance	Single	25g	622	1			1
Infant formula - dried - intended for infants below 6 months	official food surveillance	Single	25g	727	0			
Seeds, sprouted - ready-to-eat	official food surveillance	Single	25g	65	1			1

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,4,[5],12:i:-	S. Dublin
Meat from bovine animals - fresh - at slaughterhouse	bact. meat inspection at slaughterhouse	Single	25g	7520	19		6	8	4	1
Meat from bovine animals - fresh - at processing plant	official food surveillance	Single	25g	204	1			1		
Meat from bovine animals - fresh - at retail	official food surveillance	Single	25g	620	4		1	3		
Meat from bovine animals - meat preparation - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	5	1		1			
Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	0	---	0	0	0				0	
Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	27	0					
Meat from bovine animals - meat preparation - intended to be eaten cooked - at retail	official food surveillance	Single	25g	52	0					
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	10	0					
Meat from bovine animals - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	43	0					
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	official food surveillance	Single	25g	33	1				1	
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	65	0					

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,4,[5],12:i:-	S. Dublin
Meat from bovine animals - minced meat - intended to be eaten raw - at retail	official food surveillance	Single	25g	528	5	1	3		1	
Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	11	0					
Meat from bovine animals - minced meat - intended to be eaten cooked - at retail	official food surveillance	Single	25g	82	0					
Meat from horse - fresh - at slaughterhouse	official food surveillance	Single	25g	5	0					
Meat from horse - fresh - at processing plant	official food surveillance	Single	25g	2	0					
Meat from horse - fresh - at retail	official food surveillance	Single	25g	11	0					
Meat from pig - fresh - at slaughterhouse	official food surveillance	Single	25g	4787	49	2	19	20	6	2
Meat from pig - fresh - at processing plant	official food surveillance	Single	25g	593	12		3	3	6	
Meat from pig - fresh - at retail	official food surveillance	Single	25g	2154	43		14	24	5	
Meat from pig - meat preparation - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	162	5		1	2	2	
Meat from pig - meat preparation - intended to be eaten raw - at retail	0	Single	0	0	0		0		0	
Meat from pig - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	116	1			1		
Meat from pig - meat preparation - intended to be eaten cooked - at retail	official food surveillance	Single	25g	622	12		3	7	2	
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	81	0					

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. 1,4,[5],12:i:-	S. Dublin
Meat from pig - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	540	2			2		
Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	580	18		13		5	
Meat from pig - minced meat - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	172	7		2	4	1	
Meat from pig - minced meat - intended to be eaten raw - at retail	official food surveillance	Single	25g	492	19	1	7	11		
Meat from pig - minced meat - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	13	3			3		
Meat from pig - minced meat - intended to be eaten cooked - at retail	official food surveillance	Single	25g	161	1			1		
Meat from sheep - fresh - at slaughterhouse		Single	25g	32	0					
Meat from sheep - fresh - at processing plant	official food surveillance	Single	25g	6	0					
Meat from sheep - fresh - at retail	official food surveillance	Single	25g	68	0					

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-13	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	Sample weight	25g	0
	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	Source of information	official food surveillance	0
	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	Total units positive for Salmonella	1	0
	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	S. 1,4,[5],12:i:-	1	0
	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	Sampling unit	Single	---
	Meat from bovine animals - meat preparation - intended to be eaten raw - at retail	Units tested	33	0
	Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	Sample weight		25g
	Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	S. 1,4,[5],12:i:-		1
	Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	Sampling unit		Single
	Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	Total units positive for Salmonella		1
	Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	Source of information		official food surveillance
Meat from bovine animals - meat products - raw but intended to be eaten cooked - at retail	Units tested		33	



Date of Modification	Row name	Column name	Old value	New value
2012-01-13	Meat from pig - meat preparation - intended to be eaten raw - at retail	Units tested	580	0
	Meat from pig - meat preparation - intended to be eaten raw - at retail	Source of information	official food surveillance	0
	Meat from pig - meat preparation - intended to be eaten raw - at retail	Sample weight	25g	0
	Meat from pig - meat preparation - intended to be eaten raw - at retail	S. 1,4,[5],12:i:-	5	0
	Meat from pig - meat preparation - intended to be eaten raw - at retail	S. Typhimurium	13	0
	Meat from pig - meat preparation - intended to be eaten raw - at retail	Total units positive for Salmonella	18	0
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	Units tested		580
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	S. 1,4,[5],12:i:-		5
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	Sample weight		25g
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	Source of information		official food surveillance
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	S. Typhimurium		13
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	Total units positive for Salmonella		18
	Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant	Sampling unit		Single



## 2.1.3 Salmonella in animals

### A. Salmonella spp. in Gallus Gallus - breeding flocks

#### Monitoring system

##### Sampling strategy

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

Sampling is based on Regulation (EC) No. 1003/2005.

#### Results of the investigation

In 2010, 300 parent breeding flocks for egg production line were sampled with no positive flock for Salmonella.

Among 448 parent flocks of the broiler production line 1 (0.22 %) was positive for Salmonella (S. Ohio).

No parent breeding flock was positive for one of the top 5 serovars considered in Reg. (EC) No. 1003/2005.

Overall, out of 927 breeding flocks tested 6 were positive for Salmonella and 3 were positiv for S. Enteritidis or S. Typhimurium.

## B. Salmonella spp. in Gallus Gallus - broiler flocks

### Monitoring system

#### Sampling strategy

##### Broiler flocks

Sampling was carried out according to Reg (EC) No 646/2007.

### Results of the investigation

In 2010, 4354 flocks of broilers were tested. Among those, 193 (4.4 %) were positive for Salmonella with 6 flocks (0.14 %) positive for *S. Enteritidis* and 4 flocks (0.09 %) positive for *S. Typhimurium*. In total 10 flocks (0.23 %) were positive for the Top 2 serovars.

## C. Salmonella spp. in Gallus Gallus - flocks of laying hens

### Monitoring system

#### Sampling strategy

##### Laying hens flocks

Sampling was according to Regulation (EC) No. 1168/2006.

### Results of the investigation

In 2010, 4247 flocks were examined. 112 flocks (2.6 %) were positive for Salmonella. *S. Enteritidis* was detected in 71 flocks (1.7 %). *S. Typhimurium* was detected in 10 flocks (0.2 %). In total 1.9 % of the flocks were positive for these Top 2 Salmonella serovars.

## D. Salmonella spp. in bovine animals

### Monitoring system

#### Sampling strategy

Results reported here are from diagnostic investigations in bovine animals.

Information on serovar and phage type patterns were also collected from diagnostic submissions to the NRL for Salmonella.

#### Methods of sampling (description of sampling techniques)

##### Animals at farm

Faecal samples, organs from diseased or dead animals.

##### Animals at slaughter (herd based approach)

Organs from animals in case of suspicion of salmonellosis.

#### Case definition

##### Animals at farm

According to the national regulation (see below) bovine salmonellosis is present if i) faecal samples have been taken at an interval of eight to fifteen days and, irrespective of the order of results, the presence of Salmonella has been detected by bacteriological examination in at least three of these samples or ii) manifestations of the disease indicating salmonellosis have been detected by clinical or pathological-anatomical examinations and the presence of Salmonella as been detected by bacteriological methods of examination. A positive case is the first detection in an animal or in a farm in a year.

### Vaccination policy

Prophylactic and metaphylactic vaccination using live or inactivated vaccines are optional.

There are several vaccines licensed for use in cattle. In cases of salmonellosis caused by serotypes that are not covered by the licensed vaccines herd specific vaccines produced by authorized companies are also in use.

### Other preventive measures than vaccination in place

Good Farming Practices and Good Hygienic Practices

### Control program/mechanisms

#### The control program/strategies in place

According to Regulation on Protection against Salmonellosis in Cattle from 6 January 1972 and 14 November 1991 (BGBl. I S. 2118)

### Measures in case of the positive findings or single cases

According to Regulation on Protection against Salmonellosis in Cattle from 6 January 1972 and 14 November 1991 (BGBl. I S. 2118)

### Notification system in place

Officially confirmed outbreaks of salmonellosis in cattle are notified in the National Animal Disease Reporting System (TSN) since 1995.

### Results of the investigation

Among the Salmonella isolates from cattle, S. Typhimurium (34,8 %) and its monophasic variant (28,3 %) clearly predominated. Other frequent serovars were S. Dublin (9.0 %), S. Enteritidis (6.6 %), and S. London (8.2 %). Among the S. Enteritidis phage types PT4 (4/16), PT8 and PT21 (5/16 each) predominated. S. Typhimurium were mainly from phage types DT104L (31.9 %) and 104B low, (18.8 %) followed by DT012 (14.5 %) and DT009 (13.2 %). The monophasic S. Typhimurium isolates were

primarily DT193, PT- (91.8 %) and DT104B low (3.8 %).

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

The proportion of examined herds with positive cattle was slightly lower in 2010 (3.8 % vs. 4.2 % in 2008). Most isolates were *S. Typhimurium* followed by *Salmonella* Dublin, while *S. Enteritidis* was rarely isolated. Overall it has to be considered, that cattle are examined for *Salmonella* only in case of suspicion. Therefore extrapolation to the German cattle population would not be valid because it would result in a substantial overestimation of the problem.

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

### Monitoring system

#### Sampling strategy

##### Meat production flocks

There is no official monitoring system in place. Samples are mostly taken according to the farm policy.

### Results of the investigation

In 2010, 3 of the 66 (4.5 %) meat production flocks tested in 2009 were positive for Salmonella (2 of the 3 were *S. Typhimurium*). This result is similar to 2007 (5 %) and 2009 (4.2 %), but lower than in 2006 (19 %) and 2008 (14 %).

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

The number of samples tested per year is low and the sampling is not at random. Hence, inference from the data should be avoided.



## F. Salmonella spp. in geese - breeding flocks and meat production flocks

### Monitoring system

#### Sampling strategy

##### Breeding flocks

In geese, there is no monitoring system in place. Investigations are initiated by the owners of the animals.

### Control program/mechanisms

#### The control program/strategies in place

##### Meat production flocks

There is no official monitoring system in place. Data are derived from examinations carried out for various reasons.

### Results of the investigation

2 out of 46 (4.4 %) meat production flocks were positive for Salmonella in 2010. Among the positive flocks all were positive for S. Typhimurium.

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

The proportion of positive flocks was 2010 in the line with 2006-2008 (2008, 3.8 %, 2007, 12.5 %, 2006, 5.2 %). The number of samples collected per year is low. Hence inference from the data should be avoided.

## G. Salmonella spp. in pigs

### Monitoring system

#### Sampling strategy

##### Fattening herds

There is no official monitoring system based on bacteriology in place. Data are derived from samples taken for various reasons.

The data presented here are based solely on bacteriological examinations carried out for various reasons.

Serological data are not included.

### Vaccination policy

#### Fattening herds

Vaccination that may interfere with serological testing is prohibited.

### Control program/mechanisms

#### The control program/strategies in place

##### Fattening herds

According to the national regulation "Verordnung zur Verminderung der Salmonellenverbreitung durch Schlachtschweine", of 13.03.2007 (BGBl I, 2007, 322).

The regulation foresees serological testing of fattening pigs prior to slaughter or at the abattoir and classification of herds into low (0-20 %), medium (20-40 %) and high (>40 %) prevalence. Herds in the high prevalence category are obliged to initiate investigations and control measures.

### Results of the investigation

Overall 292 out of 1692 (17.3 %) bacterial tested herds were positive for Salmonella in 2010, which was more than in 2009 (9.0 %). As in recent years, S. Typhimurium was the most prevalent serotype (71 % of the isolates).

In 2010, S. Typhimurium (35 %) was less frequent than its monophasic variant (44.1 %). Among the other isolates, only S. Derby was identified in more than 5 % of the isolates (8.8 %). S. Enteritidis was infrequent (2 isolates, 0.4 %). Among the phage typed isolates of S. Typhimurium, as in the previous year, DT104 B low (28.6 %) and DT104L (24.1 %) predominated. 12.6 % of isolates were from DT 193, PT-, 13.1 % were RDNC. The monophasic isolates were predominantly DT193, PT- (85.3 %). However, some DT059 (4%) DT120, PTU042 (2.8 %) and DT104B low (2.4 %) were also identified.

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

Overall the proportion of positive samples was higher than in 2009. The reasons for this are not known.

The number was also lower than the rate determined for herds of breeding pigs in 2008. However, the latter was determined using a standardized sampling procedure which is not the case for the data reported here.

## H. Salmonella spp. in turkey - breeding flocks and meat production flocks

### Monitoring system

#### Sampling strategy

##### Meat production flocks

In 2010, flocks were tested according to Reg (EC) No. 584/2008. The data presented are derived from the reports of the federal states.

Information on Serovars and phage types is also presented for isolates submitted to the NRL for Salmonella for diagnostic purposes.

### Results of the investigation

In 2010, 141 flocks of breeding turkeys were sampled. No flock was positive for Salmonella. Among the 971 fattening flocks sampled according to Reg. (EC) No. 584/2008, 10 (1.0 %) were positive for Salmonella. Five flocks were positive for *S. Typhimurium* (4 flocks, 0.41 %) or its monophasic variant (1 flock, 0.1 %). One flock (0.1 %) was positive for *S. Enteritidis*.

In 2010, among diagnostic submissions of Salmonella isolates, *S. Saintpaul* (23.4 %) predominated, followed by *S. Infantis* (15.6 %). *S. Typhimurium* (11.3 %) and its monophasic variant (5%) were also frequently found. In contrast to other years, a number of isolates of *S. Coeln* were submitted (7.1 %). As in other years, *S. Enteritidis* was infrequent (2 isolates, 1.4 %, PT8 and PT21). Among the *S. Typhimurium* isolates, DT001 and DT104B low were equally frequent (7/16). All monophasic strains of *S. Typhimurium* were from phage type DT193, PT-

In line with that, isolates collected from pooled caecum samples at the slaughterhouse (n=11) were predominantly *S. Saintpaul* (3), *S. Typhimurium* (2, DT001 and DT104B low) and its monophasic variant (3). *S. Newport*, *S. Hadar* and *S. Kentucky* were each identified once in that program.

## I. Salmonella spp. in animal

### Monitoring system

#### Sampling strategy

The investigations of farm animals other than *Gallus gallus* or turkeys are mostly in the responsibility of the farmers and the veterinarians attending the herds and flocks. Some animal breeding companies or agricultural aggregations have own monitoring systems.

Salmonellosis in cattle is a notifiable diseases under the Regulations on Bovine Salmonellosis (see respective chapter) as part of the law on animal epidemics. The major part of the examinations of farm animals is conducted in cattle. However, there is no active monitoring in place. Often, other (farm) animal species are included in the examinations of the cattle herds involved.

Additionally, the veterinary control of animals before slaughter is a source of official samplings.

Table Salmonella in breeding flocks of Gallus gallus

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks		official reports of the laender	Flock	4	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period		official reports of the laender	Flock	18	0						
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult		official reports of the laender	Flock	300	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks		official reports of the laender	Flock	18	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period		official reports of the laender	Flock	56	0						
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult		official reports of the laender	Flock	448	1						
Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult <sup>1)</sup>		official reports of the laender	Flock	1	0						
Gallus gallus (fowl) - breeding flocks, unspecified <sup>2)</sup>		official reports of the laender	Flock	927	6	2			1		
Gallus gallus (fowl) - breeding flocks, unspecified - day-old chicks <sup>3)</sup>		official reports of the laender	Flock	36	0						
Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period <sup>4)</sup>		official reports of the laender	Flock	352	5	2			3		

Table Salmonella in breeding flocks of Gallus gallus

	Salmonella spp., unspecified
Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks	
Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period	
Gallus gallus (fowl) - parent breeding flocks for egg production line - adult	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - day-old chicks	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - during rearing period	
Gallus gallus (fowl) - parent breeding flocks for broiler production line - adult	1
Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult <sup>1)</sup>	
Gallus gallus (fowl) - breeding flocks, unspecified <sup>2)</sup>	3
Gallus gallus (fowl) - breeding flocks, unspecified - day-old chicks <sup>3)</sup>	
Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period <sup>4)</sup>	

## Comments:

<sup>1)</sup> not valid for use deleting is impossible

<sup>2)</sup> Adult breeders, sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2

Table Salmonella in breeding flocks of Gallus gallus

## Comments:

<sup>3)</sup> sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2

<sup>4)</sup> sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-17	Gallus gallus (fowl) - breeding flocks, unspecified	Comment	Breeding layers, sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2	Adult breeders, sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2
2012-01-11	Gallus gallus (fowl) - breeding flocks, unspecified	Comment	sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2	Breeding layers, sum of all categories: official sampling acc. to 1003/2005, Anex 2.1.2
2011-12-15	Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult	Units tested	34	1
	Gallus gallus (fowl) - grandparent breeding flocks for broiler production line - adult	Comment		not valid for use deleting is impossible

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Pigeons	official reports of the laender	Animal	1484	136		129	7



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	S. Paratyphi B var. Java
Cattle (bovine animals)	official reports of the laender	Herd	3704	139	4	67	7	58	3
Cattle (bovine animals) - calves (under 1 year)	official reports of the laender	Herd	715	26	1	19	4	1	1
Goats	official reports of the laender	Herd	190	4		1		3	
Pigs	official reports of the laender	Herd	1756	328	3	108	1	216	
Pigs - breeding animals	official reports of the laender	Herd	302	76		52		24	
Pigs - fattening pigs	official reports of the laender	Herd	392	65	2	20		43	
Sheep	official reports of the laender	Herd	496	26		1		25	
Solipeds, domestic	official reports of the laender	Herd	230	0					

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		official reports of the laender	Flock	685	8	2			6	
Gallus gallus (fowl) - laying hens - during rearing period		official reports of the laender	Flock	263	4				4	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official and industry sampling		official reports of the laender	Flock	4247	112	71	10		30	1
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - sampling by industry		official reports of the laender	Flock	2404	30	13	3		14	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - objective sampling		official reports of the laender	Flock	1298	46	31	5		10	
Gallus gallus (fowl) - laying hens - adult - at farm - Control and eradication programmes - official sampling - suspect sampling		official reports of the laender	Flock	79	24	21	2		1	
Gallus gallus (fowl) - broilers - before slaughter - at farm - Control and eradication programmes - official and industry sampling		official reports of the laender	Flock	4354	193	6	4		182	1
Turkeys - breeding flocks, unspecified - adult - at farm - Control and eradication programmes - official and industry sampling		official reports of the laender	Flock	141	0					
Turkeys - fattening flocks - before slaughter - at farm - Control and eradication programmes - official and industry sampling		official reports of the laender	Flock	971	10	1	4	1	3	1
Ducks - meat production flocks		official reports of the laender	Flock	66	3		2		1	

Table Salmonella in other poultry

	Number of existing flocks	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Infantis
Geese - meat production flocks		official reports of the laender	Flock	46	2		2			
Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - official sampling - objective sampling (Pooled caeca of 10 birds per batch)		Monitoring	Slaughter batch	363	13				13	

## 2.1.4 Salmonella in feedingstuffs

### A. Salmonella spp. in feed

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

In 2010, Salmonella was found in 6.6 % of the samples of carnivore feeds (2009: 3.8 %). *S. Typhimurium* was identified in about a quarter of the positive samples of carnivore feed and *S. Infantis* was isolated in one sample. Rapeseed showed 2.4 % positive findings (2009: 2.7 %). The contamination of soybeans with Salmonella decreased to 1.0 % (2009: 2.5 %). In cereal, grit and flour no Salmonella positive samples could be found in 2010 (2009: 2 pos.). In mixed feed for poultry Salmonella could be found in 1.1 % of the samples, in mixed feed for pig Salmonella could be found in 0.8 % of the samples.

Imports from third countries:

Feeds of animal origin were mainly imported as fish meal as in the previous years. Fish meal was imported as meal and in loose form to Bremen. In 2010, 25 % of the fish meal consignments tested positive for Salmonella (2009: 6.1 %). 25 % of the 220,096 imported tonnes proved to be Salmonella positive (2009: 4.6 %), i.e. 54,026 tonnes. The imports originated from Peru and Morocco.

Among the 662 Salmonella isolates from feedingstuffs submitted to the NRL for diagnostic purposes in 2010, *S. Typhimurium* (0.8 %), its monophasic variant (1.0 %) and *S. Enteritidis* (0.4 %) were infrequent. The most frequent serovars were *S. Kentucky*, *S. Mbandaka*, *S. Senftenberg*, *S. Ohio*, *S. Idikan* and *S. Montevideo* (8 to 15 % each).

#### Additional information

Random samples of feeds of animal origin are regularly examined by the official laboratories of the federal Laender in accordance with the Regulations on Feed Production. Examinations for Salmonella are also frequently conducted in this context. Prior to import, feeds of animal origin and other products of animal origin are examined on a random sample basis according to the provisions and sampling as stipulated in the regulation (EC) 1774/2002. The sampling procedure is based on the former Annex 12 to the Regulations on the Protection of the Domestic Market against Epizootics. In the case of processed animal protein at least 25 individual samples are collected from batches of up to 250 tonnes and 5 extra samples for every additional 50 tonnes.

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. Infantis
Compound feedingstuffs for cattle - final product	official food surveillance	Single	25g	351	2			2	
Compound feedingstuffs for pigs - final product	official food surveillance	Single	25g	508	4			4	
Compound feedingstuffs for poultry (non specified) - final product	official food surveillance	Single	25g	642	7			7	
Pet food - dog snacks (pig ears, chewing bones)	official food surveillance	Single	25g	753	50		9	40	1

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Infantis
Feed material of land animal origin - animal fat	official food surveillance	Single	25g	100	0				
Feed material of land animal origin - blood meal	official food surveillance	Single	25g	103	0				
Feed material of land animal origin - bone meal	official food surveillance	Single	25g	394	0				
Feed material of land animal origin - dairy products	official food surveillance	Single	25g	64	0				
Feed material of land animal origin - greaves	official food surveillance	Single	25g	315	7			7	
Feed material of land animal origin - meat meal	official food surveillance	Single	25g	402	3			3	
Feed material of marine animal origin - fish meal	official food surveillance	Single	25g	35	1			1	
Feed material of marine animal origin - fish meal (import control)	border control	Batch	25g	431	108			108	
Pet food - dog snacks (pig ears, chewing bones) (import control)	border control	Batch	25g	290	47	1	2	41	3

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin - barley derived	official food surveillance	Single	25g	131	0			
Feed material of cereal grain origin - maize - derived	official food surveillance	Single	25g	235	0			
Feed material of cereal grain origin - wheat derived	official food surveillance	Single	25g	369	0			
Feed material of oil seed or fruit origin - groundnut derived	official food surveillance	Single	25g	2	0			
Feed material of oil seed or fruit origin - linseed derived	official food surveillance	Single	25g	11	1			1
Feed material of oil seed or fruit origin - palm kernel derived	official food surveillance	Single	25g	26	0			
Feed material of oil seed or fruit origin - rape seed derived	official food surveillance	Single	25g	963	23			23
Feed material of oil seed or fruit origin - soya (bean) derived	official food surveillance	Single	25g	397	4			4
Feed material of oil seed or fruit origin - sunflower seed derived	official food surveillance	Single	25g	115	0			
Other feed material - forages and roughages <sup>1)</sup>	official food surveillance	Single	25g	104	1		1	
Other feed material - other plants	official food surveillance	Single	25g	107	0			

## Comments:

<sup>1)</sup> Hay

Table Salmonella in other feed matter



## 2.1.5 Salmonella serovars and phagetype distribution

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

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
Other serovars				51				1015				6	
S. 1,4,12:d:-							2				1		
S. 1,4,5,12:-:1,2							1						
S. 1,4,[5],12:i:-			85	73			251	3			4		
S. 1,9,12:-:-			4								1		
S. Abony			1	1							1	1	

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. Agona			6	48				2			2		
S. Anatum							5	6			3		
S. Anatum var. 15								3					
S. Bergen			1										
S. Blockley													
S. Bovismorbificans							1				1		
S. Brandenburg				1			7	36				6	
S. Bredeney													
S. Chester											1		
S. Choleraesuis				1									
S. Coeln							1						

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. Derby			3	4			50	51					
S. Dublin			22	120									
S. Enteritidis			16	128			2	4			102	20	
S. Gallinarum											5		
S. Gallinarum biovar Pullorum												9	
S. Give								1					
S. Goldcoast			1	1									
S. Hadar											4		
S. Havana											7		
S. Heidelberg													
S. Hessarek			1	1									

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. IIIa			1										
S. IIIb													
S. Indiana											1		
S. Infantis			1	31			9	15			12	2	
S. Isangi											1		
S. Kentucky													
S. Kottbus													
S. Livingstone								3			6		
S. London			20	46			6	4					
S. Manchester											1		
S. Manhattan												1	

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. Mbandaka							1	1			4		
S. Meleagridis													
S. Minnesota											1		
S. Montevideo			1				3	10			1	1	
S. Muenster													
S. Newport													
S. Ohio			3	102			4	2			5		
S. Panama													
S. Paratyphi B var. Java			2	3							23		
S. Regent													
S. Rissen							3						

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. Saintpaul			1	7							8		
S. Schleissheim			1										
S. Schwarzengrund											1	1	
S. Senftenberg			2	2							11	16	
S. Stourbridge													
S. Tennessee											1		
S. Typhimurium			69	860			199	487			17	8	
S. Virchow								2					
S. enterica subsp. enterica, rough			2	2			12				27		
S. enterica subsp. salamae											1		
S. group B				214			3	27			2	1	

Table Salmonella serovars in animals

Serovar	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			244	1704			569	1694			257	74	
Number of isolates serotyped	0	0	244	1704	0	0	569	1694	0	0	257	74	0
Number of isolates per serovar													
S. group C								14					
S. group C1			1				8	8			1		
S. group C2				3							1		
S. group D1				3								2	
S. group E				2			1						
Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring				Gallus gallus (fowl) - laying hens				Turkeys	
Sources of isolates	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
Other serovars													

Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. 1,4,12:d:-									1				
S. 1,4,5,12:-:1,2									1				
S. 1,4,[5],12:i:-		10							2				
S. 1,9,12:-:-													
S. Abony													
S. Agona													
S. Anatum					7				1				
S. Anatum var. 15													
S. Bergen													
S. Blockley													
S. Bovismorbificans		1											



Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. Brandenburg													
S. Bredeney		1											
S. Chester													
S. Choleraesuis													
S. Coeln									1				
S. Derby													
S. Dublin													
S. Enteritidis		8			2				86				
S. Gallinarum													
S. Gallinarum biovar Pullorum													
S. Give													

Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. Goldcoast													
S. Hadar									1				
S. Havana		1											
S. Heidelberg									4				
S. Hessarek									2				
S. IIIa									1				
S. IIIb													
S. Indiana		11											
S. Infantis		1			1				1				
S. Isangi		1											
S. Kentucky													

Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. Kottbus		1											
S. Livingstone		2			9				1				
S. London													
S. Manchester													
S. Manhattan													
S. Mbandaka		6			1				3				
S. Meleagridis		7											
S. Minnesota													
S. Montevideo		1							4				
S. Muenster		4											
S. Newport													

Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. Ohio													
S. Panama		1											
S. Paratyphi B var. Java		5			5								
S. Regent		3											
S. Rissen									1				
S. Saintpaul													
S. Schleissheim									1				
S. Schwarzengrund													
S. Senftenberg		1			1								
S. Stourbridge													
S. Tennessee		5											

Table Salmonella serovars in animals

Serovar	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		208			27				145				
Number of isolates serotyped	0	208	0	0	27	0	0	0	145	0	0	0	0
Number of isolates per serovar													
S. Typhimurium		136			1				11				
S. Virchow									2				
S. enterica subsp. enterica, rough									21				
S. enterica subsp. salamae													
S. group B													
S. group C													
S. group C1		2											
S. group C2													
S. group D1													
S. group E													

Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
Other serovars	6									
S. 1,4,12:d:-										
S. 1,4,5,12:-:1,2										
S. 1,4,[5],12:i:-	7			3				1		
S. 1,9,12:-:-										
S. Abony										
S. Agona	1									
S. Anatum										
S. Anatum var. 15										
S. Bergen										
S. Blockley	1									

Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
S. Bovismorbificans										
S. Brandenburg	4									
S. Bredeney	1									
S. Chester										
S. Choleraesuis										
S. Coeln	10									
S. Derby	1									
S. Dublin										
S. Enteritidis	2									
S. Gallinarum										
S. Gallinarum biovar Pullorum										

Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
S. Give										
S. Goldcoast										
S. Hadar	1	1		1						
S. Havana										
S. Heidelberg										
S. Hessarek										
S. IIIa										
S. IIIb	1									
S. Indiana										
S. Infantis	22									
S. Isangi										



Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
S. Kentucky	1	1		1						
S. Kottbus	1									
S. Livingstone										
S. London										
S. Manchester										
S. Manhattan	7	2								
S. Mbandaka										
S. Meleagridis										
S. Minnesota	2									
S. Montevideo	5									
S. Muenster										

Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
S. Newport	3			1						
S. Ohio	2									
S. Panama										
S. Paratyphi B var. Java	2									
S. Regent	1									
S. Rissen	1									
S. Saintpaul	33			3				3		
S. Schleissheim										
S. Schwarzengrund	2									
S. Senftenberg	2									
S. Stourbridge	1	1								

Table Salmonella serovars in animals

Serovar	Turkeys		Turkeys - at slaughterhouse - animal sample - caecum - Monitoring				Turkeys - meat production flocks - Monitoring			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates										
Number of isolates in the laboratory	141	11		11				11		
Number of isolates serotyped	141	11	0	11	0	0	0	11	0	0
Number of isolates per serovar										
S. Tennessee										
S. Typhimurium	16	6		2				5		
S. Virchow										
S. enterica subsp. enterica, rough	4							2		
S. enterica subsp. salamae										
S. group B	1									
S. group C										
S. group C1										
S. group C2										
S. group D1										
S. group E										

## Table Salmonella serovars in animals

Footnote:

Information on "Surveillance" isolates from cattle, pigs and chicken was taken from the reports of the Länder including isolates from examinations carried out for various purposes.

"Clinical" isolates were submitted to the National reference laboratory for Salmonella for diagnostic purposes.

Neither of the two origins is based on objective sampling according to a sampling plan.

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		All feedingstuffs (investigated by NRL Salmonella)		Compound feedingstuffs for poultry (non specified)		Pet food - dog snacks (pig ears, chewing bones)	
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Sources of isolates								
Number of isolates in the laboratory	4			622	7		50	
Number of isolates serotyped	4	0	0	622	7	0	50	0
Number of isolates per serovar								
Salmonella spp., unspecified					1		17	
S. 1,4,12:d:-				10				
S. 1,4,[5],12:i:-				6				
S. Agona				26				
S. Anatum				3				
S. Bareilly							2	
S. Carrau				1				
S. Cerro				23				
S. Corvallis				10				
S. Cubana				8				

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		All feedingstuffs (investigated by NRL Salmonella)		Compound feedingstuffs for poultry (non specified)		Pet food - dog snacks (pig ears, chewing bones)	
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Sources of isolates								
Number of isolates in the laboratory	4			622	7		50	
Number of isolates serotyped	4	0	0	622	7	0	50	0
Number of isolates per serovar								
S. Enteritidis				4				
S. Havana				7				
S. Idikan				56				
S. Infantis				12			1	
S. Kentucky				91				
S. Kiambu				1				
S. Livingstone				22	5		11	
S. London				5				
S. Mbandaka	1			52	1		1	
S. Minnesota				3				
S. Montevideo				53				

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		All feedingstuffs (investigated by NRL Salmonella)		Compound feedingstuffs for poultry (non specified)		Pet food - dog snacks (pig ears, chewing bones)	
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Sources of isolates								
Number of isolates in the laboratory	4			622	7		50	
Number of isolates serotyped	4	0	0	622	7	0	50	0
Number of isolates per serovar								
S. Muenster				1				
S. Newport				1			2	
S. Ohio				71				
S. Oranienburg				41				
S. Ouakam				1				
S. Putten				3				
S. Reading				1				
S. Rissen				5				
S. Salford				2				
S. Sandiego				2				
S. Senftenberg	2			67			6	

Table Salmonella serovars in feed

Serovar	Compound feedingstuffs for pigs		All feedingstuffs (investigated by NRL Salmonella)		Compound feedingstuffs for poultry (non specified)		Pet food - dog snacks (pig ears, chewing bones)	
	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical	Monitoring	Clinical
Sources of isolates								
Number of isolates in the laboratory	4			622	7		50	
Number of isolates serotyped	4	0	0	622	7	0	50	0
Number of isolates per serovar								
S. Southbank				1				
S. Telaviv				2				
S. Tennessee				12				
S. Typhimurium				5			9	
S. Zanzibar				1				
S. enterica subsp. enterica, rough				3			1	
S. group B	1			1				
S. group C1				1				
S. group E				1				
S. group G				7				



Table Salmonella serovars in feed

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		Eggs - table eggs - Monitoring		Meat from pig - minced meat - intended to be eaten raw
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	42	6	178	57	113	71					11		
Number of isolates serotyped	42	6	178	57	113	71	0	0	0	0	11	0	0
Number of isolates per serovar													
Other serovars		3		7		16							
S. 1,4,12:d:-					3								
S. 1,4,[5],12:i:-	15		55	11	5	2							
S. Agona													
S. Anatum					2	2							
S. Blockley													
S. Bovismorbificans	1												
S. Brandenburg			2										
S. Bredeney					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		Eggs - table eggs - Monitoring		Meat from pig - minced meat - intended to be eaten raw
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	42	6	178	57	113	71					11		
Number of isolates serotyped	42	6	178	57	113	71	0	0	0	0	11	0	0
Number of isolates per serovar													
S. Caracas													
S. Coeln													
S. Derby	6	1	17	4									
S. Dublin	2												
S. Enteritidis	1				12	20					11		
S. Gallinarum					1								
S. Hadar					1								
S. Haifa													
S. Heidelberg					1	1							
S. Indiana					3	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		Eggs - table eggs - Monitoring		Meat from pig - minced meat - intended to be eaten raw
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	42	6	178	57	113	71					11		
Number of isolates serotyped	42	6	178	57	113	71	0	0	0	0	11	0	0
Number of isolates per serovar													
S. Infantis			9	4	11	5							
S. Kentucky					1								
S. Kiambu					1								
S. Kottbus													
S. Larochelle													
S. Lexington					2								
S. Livingstone			2		8	7							
S. London	7		10	5									
S. Mbandaka			1		3	1							
S. Minnesota					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		Eggs - table eggs - Monitoring		Meat from pig - minced meat - intended to be eaten raw
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	42	6	178	57	113	71					11		
Number of isolates serotyped	42	6	178	57	113	71	0	0	0	0	11	0	0
Number of isolates per serovar													
S. Montevideo													
S. Muenster													
S. Newport	1	1			1								
S. Ohio			3		2	1							
S. Orion					1								
S. Panama			1										
S. Paratyphi B var. Java	1				27	11							
S. Rissen			2	1									
S. Saintpaul			1	1	2	1							
S. Schwarzengrund													

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		Eggs - table eggs - Monitoring		Meat from pig - minced meat - intended to be eaten raw
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	42	6	178	57	113	71					11		
Number of isolates serotyped	42	6	178	57	113	71	0	0	0	0	11	0	0
Number of isolates per serovar													
S. Senftenberg					16								
S. Stanley													
S. Typhimurium	7	1	65	19	1								
S. Virchow					3								
S. enterica subsp. enterica, rough	1		7	1	1								
S. group B			1	3	1	1							
S. group C						1							
S. group C1					2								
S. group D1			2	1									

Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
Other serovars	1		18						
S. 1,4,12:d:-									
S. 1,4,[5],12:i:-	1	1	2	14		5		25	
S. Agona			1	2					
S. Anatum									
S. Blockley		1	4			3			
S. Bovismorbificans			1	2					
S. Brandenburg	1							2	
S. Bredeney		5	3	8		1			

Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
S. Caracas								2	
S. Coeln								1	
S. Derby								13	
S. Dublin									
S. Enteritidis	1		1	1				1	
S. Gallinarum									
S. Hadar		1	5	1		6			
S. Haifa			1	1					
S. Heidelberg									



Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
S. Indiana			13	3		11			
S. Infantis	3					2		6	
S. Kentucky		5	8	1		1		1	
S. Kiambu									
S. Kottbus								1	
S. Larochelle			1						
S. Lexington									
S. Livingstone	1	1	1	3		1			
S. London	1							1	

Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
S. Mbandaka			1	1				1	
S. Minnesota									
S. Montevideo				1					
S. Muenster						1			
S. Newport		6	6	10		2		1	
S. Ohio								1	
S. Orion									
S. Panama								5	
S. Paratyphi B var. Java			2	1		1			

Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
S. Rissen									
S. Saintpaul		16	18	9		16		3	
S. Schwarzengrund			5	5		4			
S. Senftenberg		1	3			1			
S. Stanley								1	
S. Typhimurium	10	5	10	35		10		16	
S. Virchow		1							
S. enterica subsp. enterica, rough	3			2		1		4	
S. group B	5	1	1	1					

Table Salmonella serovars in food

Serovar	Meat from pig - minced meat - intended to be eaten raw	Meat from turkey		Meat from turkey (investigated by NRL Salmonella)		Meat from turkey - carcass - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - Clinical investigations (NRL-Salmonella)	
		Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates									
Number of isolates in the laboratory	27	44	105	101		66		85	
Number of isolates serotyped	27	44	105	101	0	66	0	85	0
Number of isolates per serovar									
S. group C									
S. group C1									
S. group D1									

Footnote:

Meat from bovine animals, meat from pig, meat from broilers: monitoring means investigated by the NRL Salmonella

Table Salmonella Enteritidis phage types in animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			16				2				102		
Number of isolates phagetyped	0	0	16	0	0	0	2	0	0	0	102	0	0
Number of isolates per phagetype													
Not typeable											1		
PT 1											4		
PT 11													
PT 12											3		
PT 13a			1										
PT 14b											6		
PT 2													
PT 21			5								12		
PT 3													
PT 4			4								52		
PT 4a											1		

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Table Salmonella Enteritidis phage types in animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			16				2				102		
Number of isolates phagetyped	0	0	16	0	0	0	2	0	0	0	102	0	0
Number of isolates per phagetype													
PT 6											2		
PT 8			5				2				17		
PT RDNC			1								4		

Phagetype	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens - Monitoring				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		8			2				86				
Number of isolates phagetyped	0	8	0	0	2	0	0	0	86	0	0	0	0
Number of isolates per phagetype													
Not typeable									1				
PT 1									3				
PT 11									1				

Table Salmonella Enteritidis phage types in animals

Phagetype	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens - Monitoring				Turkeys		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		8			2				86				
Number of isolates phagetyped	0	8	0	0	2	0	0	0	86	0	0	0	0
Number of isolates per phagetype													
PT 12									3				
PT 13a													
PT 14b									2				
PT 2					1				2				
PT 21		2			1				2				
PT 3									1				
PT 4									45				
PT 4a													
PT 6									2				
PT 8		6							21				
PT RDNC									3				

Table Salmonella Enteritidis phage types in animals

Phage type  Sources of isolates	Turkeys	
	Clinical	Surveillance
Number of isolates in the laboratory	2	
Number of isolates phagetyped	2	0
Number of isolates per phage type		
Not typeable		
PT 1		
PT 11		
PT 12		
PT 13a		
PT 14b		
PT 2		
PT 21	1	
PT 3		
PT 4		
PT 4a		



Table Salmonella Enteritidis phagetypes in animals

Phagetype  Sources of isolates	Turkeys	
	Clinical	Surveillance
Number of isolates in the laboratory	2	
Number of isolates phagetyped	2	0
Number of isolates per phagetype		
PT 6		
PT 8	1	
PT RDNC		

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		Eggs - table eggs		Meat from turkey (investigated by NRL Salmonella)
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	1				12						11		1
Number of isolates phagetyped	1	0	0	0	12	0	0	0	0	0	11	0	1
Number of isolates per phagetype													
PT 1					1						1		
PT 13											1		
PT 14b											1		
PT 21											1		
PT 3					1								
PT 30											1		
PT 35	1												
PT 4					5						4		
PT 6					1								

Table Salmonella Enteritidis 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		Eggs - table eggs		Meat from turkey (investigated by NRL Salmonella)
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	1				12						11		1
Number of isolates phagetyped	1	0	0	0	12	0	0	0	0	0	11	0	1
Number of isolates per phagetype													
PT 6b					1								
PT 6c													1
PT 8					1						2		
PT RDNC					2								

Table Salmonella Enteritidis phage types in food

Phage type	Meat from turkey (investigated by NRL Salmonella)	Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat (investigated by NRL Salmonella)	
	Surveillance	Monitoring	Surveillance
Sources of isolates			
Number of isolates in the laboratory		1	
Number of isolates phagetyped	0	1	0
Number of isolates per phage type			
PT 1			
PT 13			
PT 14b			
PT 21		1	
PT 3			
PT 30			
PT 35			
PT 4			
PT 6			

Table Salmonella Enteritidis phagetypes in food

Phagetype	Meat from turkey (investigated by NRL Salmonella)	Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat (investigated by NRL Salmonella)	
	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 6b			
PT 6c			
PT 8			
PT RDNC			

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			69				199				17		
Number of isolates phagetyped	0	0	69	0	0	0	199	0	0	0	17	0	0
Number of isolates per phagetype													
DT 1			2				1				1		
DT 104b low			13				57						
DT 104I			22				48				1		
DT 12			10				3						
DT 120			1				8						
DT 135							1						
DT 193			1				25						
DT 193a							2						
DT 2			1				2				1		
DT 208							5						
DT 32							5						

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Table Salmonella Typhimurium phagetypes in animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			69				199				17		
Number of isolates phagetyped	0	0	69	0	0	0	199	0	0	0	17	0	0
Number of isolates per phagetype													
DT 40							1						
DT 41							1						
DT 6													
DT 66							1						
DT 8			2								2		
DT 89													
DT 9			9								2		
DT 99							1						
DT RDNC			8				26				10		
DT U302							8						
Not typeable							2						

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program
Sources of isolates													
Number of isolates in the laboratory			69				199				17		
Number of isolates phagetyped	0	0	69	0	0	0	199	0	0	0	17	0	0
Number of isolates per phagetype													
U 310							1						
U 311							1						

Phagetype	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens - Monitoring				Turkeys - at slaughterhouse - animal sample - caecum		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		136			1				11				2
Number of isolates phagetyped	0	136	0	0	1	0	0	0	11	0	0	0	2
Number of isolates per phagetype													
DT 1		7							1				1
DT 104b low		5							1				1
DT 104I		18											
DT 12									3				



Table Salmonella Typhimurium phagetypes in animals

Phagetype	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens - Monitoring				Turkeys - at slaughterhouse - animal sample - caecum		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		136			1				11				2
Number of isolates phagetyped	0	136	0	0	1	0	0	0	11	0	0	0	2
Number of isolates per phagetype													
DT 120		4											
DT 135													
DT 193		1											
DT 193a													
DT 2													
DT 208													
DT 32													
DT 40		1											
DT 41		3											
DT 6		4											
DT 66													

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Other poultry			Gallus gallus (fowl) - broilers - Monitoring			Gallus gallus (fowl) - laying hens - Monitoring				Turkeys - at slaughterhouse - animal sample - caecum		
	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance	Control program	Monitoring
Sources of isolates													
Number of isolates in the laboratory		136			1				11				2
Number of isolates phagetyped	0	136	0	0	1	0	0	0	11	0	0	0	2
Number of isolates per phagetype													
DT 8		18							1				
DT 89		1											
DT 9		2							1				
DT 99													
DT RDNC		71			1				4				
DT U302													
Not typeable		1											
U 310													
U 311													

Table Salmonella Typhimurium phage types in animals

Phagetype	Turkeys - at slaughterhouse - animal sample - caecum		Turkeys - meat production flocks			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates						
Number of isolates in the laboratory				5	16	
Number of isolates phagetyped	0	0	0	5	16	0
Number of isolates per phagetype						
DT 1					7	
DT 104b low				2		
DT 104I				2	7	
DT 12					1	
DT 120						
DT 135						
DT 193				1		
DT 193a						
DT 2						
DT 208						
DT 32						

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Turkeys - at slaughterhouse - animal sample - caecum		Turkeys - meat production flocks			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates						
Number of isolates in the laboratory				5	16	
Number of isolates phagetyped	0	0	0	5	16	0
Number of isolates per phagetype						
DT 40						
DT 41						
DT 6						
DT 66						
DT 8						
DT 89						
DT 9						
DT 99						
DT RDNC					1	
DT U302						
Not typeable						

Table Salmonella Typhimurium phagetypes in animals

Phagetype	Turkeys - at slaughterhouse - animal sample - caecum		Turkeys - meat production flocks			
	Clinical	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates						
Number of isolates in the laboratory				5	16	
Number of isolates phagetyped	0	0	0	5	16	0
Number of isolates per phagetype						
U 310						
U 311						

Table Salmonella Typhimurium 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		Meat from turkey		Meat from turkey (investigated by NRL Salmonella)
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	7		65		1						5		35
Number of isolates phagetyped	7	0	65	0	1	0	0	0	0	0	5	0	35
Number of isolates per phagetype													
DT 1											1		6
DT 104b low	2		21		1								
DT 104I	1		11								2		27
DT 110b													
DT 120			2										
DT 17			1										
DT 186			1										
DT 193			7										
DT 194			1										

Germany - 2010 Report on trends and sources of zoonoses

Table Salmonella Typhimurium 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		Meat from turkey		Meat from turkey (investigated by NRL Salmonella)
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory	7		65		1						5		35
Number of isolates phagetyped	7	0	65	0	1	0	0	0	0	0	5	0	35
Number of isolates per phagetype													
DT 195			1										
DT 208			4										
DT 29			1										
DT 32			1										
DT 41													1
DT 63	1		1										
DT 7			1										
DT 8	1												
DT 96													
DT RDNC	1		8										1

Table Salmonella Typhimurium 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		Meat from turkey		Meat from turkey (investigated by NRL Salmonella)
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	7		65		1						5		35
Number of isolates phagetyped	7	0	65	0	1	0	0	0	0	0	5	0	35
Number of isolates per phagetype													
DT U302	1		2										
Not typeable											2		
U 310			1										
U 311			1										



Table Salmonella Typhimurium phagetypes in food

Phagetype	Meat from turkey (investigated by NRL Salmonella)	Meat from turkey - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates					
Number of isolates in the laboratory		10		16	
Number of isolates phagetyped	0	10	0	16	0
Number of isolates per phagetype					
DT 1					
DT 104b low		1		6	
DT 104I		3		2	
DT 110b				1	
DT 120					
DT 17					
DT 186					
DT 193				3	
DT 194					
DT 195					

Table Salmonella Typhimurium phagetypes in food

Phagetype	Meat from turkey (investigated by NRL Salmonella)	Meat from turkey - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates					
Number of isolates in the laboratory		10		16	
Number of isolates phagetyped	0	10	0	16	0
Number of isolates per phagetype					
DT 208				1	
DT 29					
DT 32					
DT 41					
DT 63					
DT 7					
DT 8		1			
DT 96				1	
DT RDNC		4		1	
DT U302		1			

Table Salmonella Typhimurium phagetypes in food

Phagetype	Meat from turkey (investigated by NRL Salmonella)	Meat from turkey - at slaughterhouse - Monitoring (neck skin)		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat	
	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance
Sources of isolates					
Number of isolates in the laboratory		10		16	
Number of isolates phagetyped	0	10	0	16	0
Number of isolates per phagetype					
Not typeable					
U 310					
U 311				1	

Footnote:

Meat from turkey and meat from turkey at slaughterhouse are investigated according to the National Monitoring Plan, all other are investigated by NRL Salmonella

Table S. 1,4,[5],12:i:- phagetypes in Animals

Phagetype	Cattle (bovine animals)				Pigs				Gallus gallus (fowl)				Other poultry
	Monitoring	Clinical	Control program	Surveillance	Monitoring	Clinical	Control program	Surveillance	Monitoring	Clinical	Control program	Surveillance	Monitoring
Sources of isolates													
Number of isolates in the laboratory		85				251				4			
Number of isolates phagetyped	0	85	0	0	0	251	0	0	0	4	0	0	0
Number of isolates per phagetype													
DT 104b low		3				6							
DT 120						7							
DT 193		78				214				4			
DT 21		1											
DT 32						1							
DT 59						10							
DT 7						1							
DT 97													
DT RDNC		3				10							
Not typeable						2							

Table S. 1,4,[5],12:i:- phagetypes in Animals

Phagetype	Other poultry			Turkeys - fattening flocks			
	Clinical	Control program	Surveillance	Control program	Monitoring	Clinical	Surveillance
Sources of isolates							
Number of isolates in the laboratory	10					7	
Number of isolates phagetyped	10	0	0	0	0	7	0
Number of isolates per phagetype							
DT 104b low							
DT 120							
DT 193	8					7	
DT 21							
DT 32							
DT 59							
DT 7							
DT 97	1						
DT RDNC	1						
Not typeable							

Footnote:

DT 20 takes place for DT 21



Table S. 1,4,[5],12:i:- 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		Meat from turkey		Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat
	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	Monitoring	Surveillance	
Sources of isolates													
Number of isolates in the laboratory	15		55		5						14		25
Number of isolates phagetyped	15	0	55	0	5	0	0	0	0	0	14	0	25
Number of isolates per phagetype													
DT 104b low			2										1
DT 120			3										
DT 193	15		44		5						13		22
DT 7			1										
DT RDNC			4										2
Not typeable											1		
U 311			1										

Table S. 1,4,[5],12:i:- phage types in Food

Phage type	Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat
Sources of isolates	Surveillance
Number of isolates in the laboratory	
Number of isolates phagetyped	0
Number of isolates per phage type	
DT 104b low	
DT 120	
DT 193	
DT 7	
DT RDNC	
Not typeable	
U 311	



Table S. 1,4,[5],12:i:- phagetypes in Food

## 2.1.6 Antimicrobial resistance in Salmonella isolates

### A. Antimicrobial resistance in Salmonella in cattle

#### Sampling strategy used in monitoring

##### Procedures for the selection of isolates for antimicrobial testing

All Salmonella isolates from cattle submitted to the NRL for Salmonella for diagnostic purposes are included in the testing. However, 1 out of 7 is left out for practical reasons. Data will be submitted on an individual isolate basis in the framework of the pilot project of EFSA.

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

The proportion of resistant and multiresistant isolates from cattle is in line with results from previous years.

## B. Antimicrobial resistance in Salmonella in foodstuff derived from cattle

### Sampling strategy used in monitoring

#### Procedures for the selection of isolates for antimicrobial testing

In 2010, Salmonella isolates were included from diagnostic submissions to the NRL for Salmonella.  
Sample based data will be submitted in the framework of the pilot project.

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

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

### C. Antimicrobial resistance in Salmonella in foodstuff derived from pigs

#### Sampling strategy used in monitoring

##### Frequency of the sampling

In 2010 Salmonella isolates from foodstuff derived from pigs were from diagnostic submissions to the National Reference Laboratory for Salmonella. Sample based data will be submitted in the framework of EFSA's pilot project.

#### Laboratory used for detection for resistance

##### Antimicrobials included in monitoring

## D. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

### Sampling strategy used in monitoring

#### Methods of sampling (description of sampling techniques)

11 isolates from eggs were tested for their antimicrobial resistance. They had been collected in the framework of a monitoring program (see resp. chapter).

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

### Results of the investigation

All isolates but one were susceptible. One isolate was resistant to ampicillin.

## E. Antimicrobial resistance in Salmonella in pigs

### Sampling strategy used in monitoring

#### Procedures for the selection of isolates for antimicrobial testing

In 2010, all isolates from pigs submitted to the National Reference Laboratory for Salmonella were included in the sampling frame. Apparent duplicate isolates were excluded. Moreover, one out of 7 seven isolates, randomly chosen, was excluded from the testing for practical reasons. Results will be submitted as sample based data in the framework of EFSA's pilot project.

## F. Antimicrobial resistance in Salmonella in poultry

### Sampling strategy used in monitoring

#### Methods of sampling (description of sampling techniques)

Isolates were collected in the framework of the control programs for Salmonella in laying hens, broilers and turkeys according to EU-Regulations. All submitted isolates were tested. Additional isolates were collected from caecum content of turkeys at slaughter.

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

### Results of the investigation

Isolates from laying hens were mostly susceptible to all antimicrobials (88.8 %). Low levels of resistance were observed towards several substances. Among those, the 3rd generation cephalosporins are remarkable. Six isolates (4.2 %) were resistant to those. Likewise 5 isolates were resistant to fluoroquinolones.

Isolates from broilers were more often resistant (42.3 %). Resistance was observed towards a number of drugs including fluoroquinolones (19.2 %). Resistance towards 3rd generation cephalosporins was not observed in isolates from broilers in this context.

Among the isolates from turkeys, resistance was common. Only two of the 22 isolates from both origins were susceptible. Highest resistance rates were observed towards streptomycin, ampicillin, sulfamethoxazole and tetracyclin. But resistance to (fluoro)quinolones was also frequent (18 %).

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

Results confirm differences between isolates from laying hens and broilers concerning their resistance pattern. However, resistance to (fluoro)quinolones is common in both and in turkeys. In line with recent years, resistance rates are higher in turkeys than in Gallus gallus. However, the number of isolates from the monitoring in 2010 was limited. Therefore, careful interpretation is required.

## G. Antimicrobial resistance of Salmonella spp. in Food Meat from broilers (Gallus gallus)

### Sampling strategy used in monitoring

#### Frequency of the sampling

Salmonella isolates from broiler meat were collected in the framework of diagnostic submissions to the National Reference Laboratory for Salmonella.

#### Procedures for the selection of isolates for antimicrobial testing

All non-duplicate isolates submitted to the NRL were included in the sampling frame. Obvious duplicate strains were excluded. Moreover, 1 out of 7 isolates, randomly chosen, was also excluded for practical reasons. Sample based data will be reported in the framework of EFSA's pilot project.



## H. Antimicrobial resistance of Salmonella spp. in Food Meat from turkey

### Sampling strategy used in monitoring

#### Methods of sampling (description of sampling techniques)

Salmonella isolates from turkey meat were derived from diagnostic submissions to the NRL for Salmonella and in a national monitoring program.

In the framework of a national monitoring program turkey carcasses were examined at the slaughterhouse and meat from turkeys was examined at retail (see resp. chapter). All isolates submitted to the NRL for Salmonella were tested.

#### Procedures for the selection of isolates for antimicrobial testing

All non-duplicate isolates submitted to the NRL Salmonella were tested. One out of 7 isolates, randomly chosen, from diagnostic submissions was excluded for practical reasons. Sample based data will be reported in the framework of EFSA's pilot project.

### Results of the investigation

Overall 108 isolates were tested. Only a small proportion (13.9 %) was susceptible to all antimicrobials included in the testing. Highest resistance rates were observed to sulfamethoxazole, tetracycline, ampicillin, fluoroquinolones and streptomycin. Resistance to 3rd generation cephalosporins was observed in 2 isolates (1.9 %).

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

Overall, resistance rates of Salmonella from turkey meat are high. This is in line with results from previous studies. High resistance rates to (fluoro)quinolones are problematic, as these drugs are among the critically important antimicrobials for human medicine. Resistance to these drugs has increased substantially (from 30% in 2009 to 57 % in 2010). Likewise, resistance to cephalosporins of the third generation is an issue of concern.

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Saintpaul	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	9	0																			1		7		1	
Amphenicols - Florfenicol	16	9	0																			5		3		1	
Tetracyclines - Tetracycline	8	9	5																	2		2					
Fluoroquinolones - Ciprofloxacin	0.06	9	5			3		1						1				2				2					
Quinolones - Nalidixic acid	16	9	5																			4					
Trimethoprim	2	9	3													5		1									
Aminoglycosides - Streptomycin	32	9	5																					2			
Aminoglycosides - Gentamicin	2	9	2											5		1		1						1		1	
Aminoglycosides - Kanamycin	8	9	2																			7					
Penicillins - Ampicillin	4	9	7															2									
Cephalosporins - Cefotaxim	0.5	9	0							2		5		1		1											
Cephalosporins - Ceftazidim	2	9	0											4		3		2									
Sulphonamides - Sulfamethoxazol	256	9	5																							1	

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Saintpaul	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	93																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					5													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					5													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		2		3			2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1					1											4	128
Penicillins - Ampicillin			7															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		2									5					8	1024

Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Derby	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	14	0																			2		11		1	
Amphenicols - Florfenicol	16	14	0																			5		9			
Tetracyclines - Tetracycline	8	14	4															3		7							
Fluoroquinolones - Ciprofloxacin	0.06	14	0			10		4																			
Quinolones - Nalidixic acid	16	14	0																			14					
Trimethoprim	2	14	2													12											
Aminoglycosides - Streptomycin	32	14	5																					6		3	
Aminoglycosides - Gentamicin	2	14	0											9		5											
Aminoglycosides - Kanamycin	8	14	0																			14					
Penicillins - Ampicillin	4	14	1													1		12									
Cephalosporins - Cefotaxim	0.5	14	0							2		12															
Cephalosporins - Ceftazidim	2	14	0											3		11											
Sulphonamides - Sulfamethoxazol	256	14	5																					1		1	

Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Derby	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	3													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin				1		2	2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		5									5					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	76																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	22	2																						20		
Amphenicols - Florfenicol	16	22	2																			10		10			
Tetracyclines - Tetracycline	8	22	20																	1		1					
Fluoroquinolones - Ciprofloxacin	0.06	22	0			1		20		1																	
Quinolones - Nalidixic acid	16	22	0																			21				1	
Trimethoprim	2	22	2													19		1									
Aminoglycosides - Streptomycin	32	22	21																						1		
Aminoglycosides - Gentamicin	2	22	0											14		6		2									
Aminoglycosides - Kanamycin	8	22	0																			22					
Penicillins - Ampicillin	4	22	21															1									
Cephalosporins - Cefotaxim	0.5	22	0							19		2		1													
Cephalosporins - Ceftazidim	2	22	0											21		1											
Sulphonamides - Sulfamethoxazol	256	22	21																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	76																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					2													2	64
Amphenicols - Florfenicol		1			1													2	64
Tetracyclines - Tetracycline					20													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin						4	17											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			21															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1											21					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

Other serovars	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	20	2																			4		11		3	
Amphenicols - Florfenicol	16	20	1																	1		12		2		4	
Tetracyclines - Tetracycline	8	20	14															1		5							
Fluoroquinolones - Ciprofloxacin	0.06	20	11			5		4				1		5		4									1		
Quinolones - Nalidixic acid	16	20	10																			9				1	
Trimethoprim	2	20	2													18											
Aminoglycosides - Streptomycin	32	20	7																					7		5	
Aminoglycosides - Gentamicin	2	20	5											11		3				1						1	
Aminoglycosides - Kanamycin	8	20	2																			17		1			
Penicillins - Ampicillin	4	20	13															5		2							
Cephalosporins - Cefotaxim	0.5	20	0							10		6		2		2											
Cephalosporins - Ceftazidim	2	20	0											13		5		2									
Sulphonamides - Sulfamethoxazol	256	20	6																					1		2	



Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

Other serovars	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					2													2	64
Amphenicols - Florfenicol				1														2	64
Tetracyclines - Tetracycline				3	11													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid				1	9													4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		1		4		2	1											2	128
Aminoglycosides - Gentamicin		2	2															0.25	32
Aminoglycosides - Kanamycin				1			1											4	128
Penicillins - Ampicillin		1	12															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		7		3		1							6					8	1024

Table Antimicrobial susceptibility testing of S. Newport in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Newport	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	9	0																			5		4			
Amphenicols - Florfenicol	16	9	0																			8		1			
Tetracyclines - Tetracycline	8	9	9																								
Fluoroquinolones - Ciprofloxacin	0.06	9	4			3		2						2		2											
Quinolones - Nalidixic acid	16	9	4																			5					
Trimethoprim	2	9	3													6											
Aminoglycosides - Streptomycin	32	9	0																					6	2		
Aminoglycosides - Gentamicin	2	9	0											4		5											
Aminoglycosides - Kanamycin	8	9	0																			9					
Penicillins - Ampicillin	4	9	9																								
Cephalosporins - Cefotaxim	0.5	9	0							5		4															
Cephalosporins - Ceftazidim	2	9	0											8		1											
Sulphonamides - Sulfamethoxazol	256	9	3																								

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Newport	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					9													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					4													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			9															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		4		1							3					8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from turkey - unspecified - Surveillance - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																										
	93																										
	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	2	1																								1
Amphenicols - Florfenicol	16	2	0																						1		1
Tetracyclines - Tetracycline	8	2	0																			2					
Fluoroquinolones - Ciprofloxacin	0.06	2	2															2									
Quinolones - Nalidixic acid	16	2	2																								
Trimethoprim	2	2	1													1											
Aminoglycosides - Streptomycin	32	2	2																								
Aminoglycosides - Gentamicin	2	2	2																						2		
Aminoglycosides - Kanamycin	8	2	2																								1
Penicillins - Ampicillin	4	2	2																								
Cephalosporins - Cefotaxim	0.5	2	0											2													
Cephalosporins - Ceftazidim	2	2	0															2									
Sulphonamides - Sulfamethoxazol	256	2	2																								

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from turkey - unspecified - Surveillance - quantitative data [Dilution method ]

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																		
	93																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin				1				1										2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1																4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													2					8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Typhimurium	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	51	17																			3		28		3	
Amphenicols - Florfenicol	16	51	17																			14		19		1	
Tetracyclines - Tetracycline	8	51	35																	15		1					
Fluoroquinolones - Ciprofloxacin	0.06	51	1			15		34		1				1													
Quinolones - Nalidixic acid	16	51	1																			47		3			
Trimethoprim	2	51	14													37											
Aminoglycosides - Streptomycin	32	51	27																			1		16		6	
Aminoglycosides - Gentamicin	2	51	1											36		14											
Aminoglycosides - Kanamycin	8	51	3																			48				1	
Penicillins - Ampicillin	4	51	35															14		2							
Cephalosporins - Cefotaxim	0.5	51	0							36		15															
Cephalosporins - Ceftazidim	2	51	0											49		2											
Sulphonamides - Sulfamethoxazol	256	51	34																								

Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Typhimurium	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					17													2	64
Amphenicols - Florfenicol		5		9	3													2	64
Tetracyclines - Tetracycline		7		10	18													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			14															0.5	32
Aminoglycosides - Streptomycin		1		11		5	11											2	128
Aminoglycosides - Gentamicin			1															0.25	32
Aminoglycosides - Kanamycin							2											4	128
Penicillins - Ampicillin			35															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		6		10		1							34					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from bovine animals - unspecified - Surveillance																											
	40																											
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16		
Amphenicols - Chloramphenicol	16	14	0																			3		11				
Amphenicols - Florfenicol	16	14	0																			9		5				
Tetracyclines - Tetracycline	8	14	9															1		4								
Fluoroquinolones - Ciprofloxacin	0.06	14	0			3		11																				
Quinolones - Nalidixic acid	16	14	0																			12		2				
Trimethoprim	2	14	0													14												
Aminoglycosides - Streptomycin	32	14	14																									
Aminoglycosides - Gentamicin	2	14	0											9		4		1										
Aminoglycosides - Kanamycin	8	14	0																			14						
Penicillins - Ampicillin	4	14	14																									
Cephalosporins - Cefotaxim	0.5	14	0							7		6		1														
Cephalosporins - Ceftazidim	2	14	0											12		2												
Sulphonamides - Sulfamethoxazol	256	14	14																									



Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from bovine animals - unspecified - Surveillance																		
	40																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					9													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						9	5											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			14															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol												14						8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Livingstone	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																						2		
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0			2																					
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																				1		1		
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Livingstone	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

## Table Antimicrobial susceptibility testing of *S. London* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. London	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																						1		
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. London* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. London	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of S. Paratyphi B var. Java in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

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

S. Paratyphi B var. Java	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																	1							
Amphenicols - Florfenicol	16	1	0																	1							
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	1																								
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																							1	

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Paratyphi B var. Java	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol																		8	1024

Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Indiana  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																										
	93																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	3	0																	1		2					
Amphenicols - Florfenicol	16	3	0																			3					
Tetracyclines - Tetracycline	8	3	3																								
Fluoroquinolones - Ciprofloxacin	0.06	3	3												3												
Quinolones - Nalidixic acid	16	3	2																							1	
Trimethoprim	2	3	3																								
Aminoglycosides - Streptomycin	32	3	2																								
Aminoglycosides - Gentamicin	2	3	0											1		2											
Aminoglycosides - Kanamycin	8	3	0																			3					
Penicillins - Ampicillin	4	3	1															2									
Cephalosporins - Cefotaxim	0.5	3	0							3																	
Cephalosporins - Ceftazidim	2	3	0											3													
Sulphonamides - Sulfamethoxazol	256	3	3																								



Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Indiana	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					3													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		2																4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		1		1		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													3					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from broilers (Gallus gallus) - unspecified - Surveillance - quantitative data [Dilution method ]

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

Other serovars	Meat from broilers (Gallus gallus) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	20	3																			3		14			
Amphenicols - Florfenicol	16	20	0																	1		9		8		2	
Tetracyclines - Tetracycline	8	20	4															2		14							
Fluoroquinolones - Ciprofloxacin	0.06	20	7			9		4				2		1		3										1	
Quinolones - Nalidixic acid	16	20	7																			13					
Trimethoprim	2	20	3													17											
Aminoglycosides - Streptomycin	32	20	4																					7		5	
Aminoglycosides - Gentamicin	2	20	3											14		2				1						1	
Aminoglycosides - Kanamycin	8	20	1																			19					
Penicillins - Ampicillin	4	20	6													2		11		1							
Cephalosporins - Cefotaxim	0.5	20	1							8		10		1									1				
Cephalosporins - Ceftazidim	2	20	1											11		8										1	
Sulphonamides - Sulfamethoxazol	256	20	7																							2	

Table Antimicrobial susceptibility testing of Other serovars in Meat from broilers (Gallus gallus) - unspecified - Surveillance - quantitative data [Dilution method ]

Other serovars	Meat from broilers (Gallus gallus) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol				1	2													2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				2	2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					7													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		4		2		1	1											2	128
Aminoglycosides - Gentamicin		2																0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			6															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		5		4		2							7					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

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

Other serovars	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	12	0																						12		
Amphenicols - Florfenicol	16	12	0																			8		4			
Tetracyclines - Tetracycline	8	12	1															1		10							
Fluoroquinolones - Ciprofloxacin	0.06	12	1			4		7																		1	
Quinolones - Nalidixic acid	16	12	1																			11					
Trimethoprim	2	12	1													11											
Aminoglycosides - Streptomycin	32	12	0																						9		3
Aminoglycosides - Gentamicin	2	12	0											7		4		1									
Aminoglycosides - Kanamycin	8	12	0																			12					
Penicillins - Ampicillin	4	12	2													1		9									
Cephalosporins - Cefotaxim	0.5	12	0							9		2		1													
Cephalosporins - Ceftazidim	2	12	0											10		1		1									
Sulphonamides - Sulfamethoxazol	256	12	1																								1

Table Antimicrobial susceptibility testing of Other serovars in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

Other serovars	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		8									1					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

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

S. Saintpaul	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	15	2																			1		5		7	
Amphenicols - Florfenicol	16	15	0																			6		2		7	
Tetracyclines - Tetracycline	8	15	7																	1		7					
Fluoroquinolones - Ciprofloxacin	0.06	15	8			1		5		1						1		6		1							
Quinolones - Nalidixic acid	16	15	8																			6		1			
Trimethoprim	2	15	5													7		3									
Aminoglycosides - Streptomycin	32	15	8																					1			
Aminoglycosides - Gentamicin	2	15	7											5		2		1						4		3	
Aminoglycosides - Kanamycin	8	15	7																			8				4	
Penicillins - Ampicillin	4	15	12															2				1					
Cephalosporins - Cefotaxim	0.5	15	0							2		5		7		1											
Cephalosporins - Ceftazidim	2	15	0											2		10		3									
Sulphonamides - Sulfamethoxazol	256	15	14																								

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

S. Saintpaul	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		1		1														2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					7													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					8													4	64
Trimethoprim			5															0.5	32
Aminoglycosides - Streptomycin		6		6		2												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		3																4	128
Penicillins - Ampicillin			12															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1									14					8	1024

Table Antimicrobial susceptibility testing of S. Derby in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Derby	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	6	0																						3		3
Amphenicols - Florfenicol	16	6	0																			1		5			
Tetracyclines - Tetracycline	8	6	0																	5		1					
Fluoroquinolones - Ciprofloxacin	0.06	6	0			2		4																			
Quinolones - Nalidixic acid	16	6	0																			6					
Trimethoprim	2	6	0													6											
Aminoglycosides - Streptomycin	32	6	1																						3		2
Aminoglycosides - Gentamicin	2	6	0											5		1											
Aminoglycosides - Kanamycin	8	6	0																			6					
Penicillins - Ampicillin	4	6	1															3		2							
Cephalosporins - Cefotaxim	0.5	6	0									5		1													
Cephalosporins - Ceftazidim	2	6	0													6											
Sulphonamides - Sulfamethoxazol	256	6	0																								



Table Antimicrobial susceptibility testing of *S. Derby* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Derby	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		4														8	1024

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Newport	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								1
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Newport	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol						1												8	1024

**Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

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

S. Senftenberg	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																			1					
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																						1		
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								1
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0																		1						
Cephalosporins - Cefotaxim	0.5	1	0											1													
Cephalosporins - Ceftazidim	2	1	0															1									
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin  
- Monitoring - quantitative data [ Dilution method ]

S. Senftenberg	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

**Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]**

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

S. Enteritidis	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																			1					
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Enteritidis	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol						1												8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

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

Other serovars	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																								1
Amphenicols - Florfenicol	16	1	0																								1
Tetracyclines - Tetracycline	8	1	0																			1					
Fluoroquinolones - Ciprofloxacin	0.06	1	0							1																	
Quinolones - Nalidixic acid	16	1	0																					1			
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								1
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0																			1					
Cephalosporins - Cefotaxim	0.5	1	0													1											
Cephalosporins - Ceftazidim	2	1	0															1									
Sulphonamides - Sulfamethoxazol	256	1	0																								



Table Antimicrobial susceptibility testing of Other serovars in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

Other serovars	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol						1												8	1024

## Table Antimicrobial susceptibility testing of *S. Newport* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Newport	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	1													1											
Quinolones - Nalidixic acid	16	1	0																								1
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								1
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Newport	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Typhimurium	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	14	6																						8		
Amphenicols - Florfenicol	16	14	3																			4		6		1	
Tetracyclines - Tetracycline	8	14	12																	2							
Fluoroquinolones - Ciprofloxacin	0.06	14	0			4		10																			
Quinolones - Nalidixic acid	16	14	0																			13		1			
Trimethoprim	2	14	5													9											
Aminoglycosides - Streptomycin	32	14	11																					2		1	
Aminoglycosides - Gentamicin	2	14	1											9		4											
Aminoglycosides - Kanamycin	8	14	2																			11		1			
Penicillins - Ampicillin	4	14	10															4									
Cephalosporins - Cefotaxim	0.5	14	0							9		5															
Cephalosporins - Ceftazidim	2	14	0											10		4											
Sulphonamides - Sulfamethoxazol	256	14	12																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Typhimurium	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					6													2	64
Amphenicols - Florfenicol		2			1													2	64
Tetracyclines - Tetracycline		2		1	9													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			5															0.5	32
Aminoglycosides - Streptomycin				3		2	6											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							2											4	128
Penicillins - Ampicillin			10															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2											12					8	1024

**Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]**

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

S. Senftenberg	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	15	0																						15		
Amphenicols - Florfenicol	16	15	0																			13		2			
Tetracyclines - Tetracycline	8	15	0															9		6							
Fluoroquinolones - Ciprofloxacin	0.06	15	4			9		2						3		1											
Quinolones - Nalidixic acid	16	15	4																			11					
Trimethoprim	2	15	0													15											
Aminoglycosides - Streptomycin	32	15	0																					6		6	
Aminoglycosides - Gentamicin	2	15	0											2		11		2									
Aminoglycosides - Kanamycin	8	15	0																			15					
Penicillins - Ampicillin	4	15	0															13		2							
Cephalosporins - Cefotaxim	0.5	15	0									4		11													
Cephalosporins - Ceftazidim	2	15	0											7		7		1									
Sulphonamides - Sulfamethoxazol	256	15	0																							1	

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Senftenberg	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					4													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		3																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		6		7		1												8	1024

Table Antimicrobial susceptibility testing of *S. Anatum* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Anatum	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	1																	1							
Fluoroquinolones - Ciprofloxacin	0.06	2	0			2																					
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	1													1											
Aminoglycosides - Streptomycin	32	2	2																								
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	2																								
Cephalosporins - Cefotaxim	0.5	2	1									1										1					
Cephalosporins - Ceftazidim	2	2	1													1								1			
Sulphonamides - Sulfamethoxazol	256	2	1																								



Table Antimicrobial susceptibility testing of *S. Anatum* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Anatum	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin							2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1									1					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from broilers (Gallus gallus) - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from broilers (Gallus gallus) - unspecified - Surveillance																											
	103																											
	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16		
Amphenicols - Chloramphenicol	16	4	0																						4			
Amphenicols - Florfenicol	16	4	0																			2		2				
Tetracyclines - Tetracycline	8	4	2																	2								
Fluoroquinolones - Ciprofloxacin	0.06	4	0			2		2																				
Quinolones - Nalidixic acid	16	4	0																			4						
Trimethoprim	2	4	0													4												
Aminoglycosides - Streptomycin	32	4	4																									
Aminoglycosides - Gentamicin	2	4	0											2		2												
Aminoglycosides - Kanamycin	8	4	0																			4						
Penicillins - Ampicillin	4	4	4																									
Cephalosporins - Cefotaxim	0.5	4	0							2		2																
Cephalosporins - Ceftazidim	2	4	0											4														
Sulphonamides - Sulfamethoxazol	256	4	4																									

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from broilers (Gallus gallus) - unspecified - Surveillance - quantitative data [Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from broilers (Gallus gallus) - unspecified - Surveillance																		
	103																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						2	2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol												4						8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																										
	93																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	13	0																						12		1
Amphenicols - Florfenicol	16	13	0																			11		2			
Tetracyclines - Tetracycline	8	13	13																								
Fluoroquinolones - Ciprofloxacin	0.06	13	0			4		9																			
Quinolones - Nalidixic acid	16	13	0																			13					
Trimethoprim	2	13	0													13											
Aminoglycosides - Streptomycin	32	13	13																								
Aminoglycosides - Gentamicin	2	13	0											9		4											
Aminoglycosides - Kanamycin	8	13	0																			13					
Penicillins - Ampicillin	4	13	12																		1						
Cephalosporins - Cefotaxim	0.5	13	0							9		4															
Cephalosporins - Ceftazidim	2	13	0											11		2											
Sulphonamides - Sulfamethoxazol	256	13	13																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																		
	93																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					13													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						8	5											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			12															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													13					8	1024

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Infantis	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	8	0																			1		6		1	
Amphenicols - Florfenicol	16	8	0																			4		4			
Tetracyclines - Tetracycline	8	8	1															3		4							
Fluoroquinolones - Ciprofloxacin	0.06	8	0			2		6																			
Quinolones - Nalidixic acid	16	8	0																			8					
Trimethoprim	2	8	1													6		1									
Aminoglycosides - Streptomycin	32	8	1																					5		2	
Aminoglycosides - Gentamicin	2	8	0											6		2											
Aminoglycosides - Kanamycin	8	8	0																			8					
Penicillins - Ampicillin	4	8	1													2		5									
Cephalosporins - Cefotaxim	0.5	8	0									7		1													
Cephalosporins - Ceftazidim	2	8	0											1		7											
Sulphonamides - Sulfamethoxazol	256	8	1																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Infantis	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				6				1					1					8	1024

**Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Indiana	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	11	0																	5		6					
Amphenicols - Florfenicol	16	11	0																	6		5					
Tetracyclines - Tetracycline	8	11	11																								
Fluoroquinolones - Ciprofloxacin	0.06	11	9			1		1						1		8											
Quinolones - Nalidixic acid	16	11	3																			2				6	
Trimethoprim	2	11	11																								
Aminoglycosides - Streptomycin	32	11	6																								
Aminoglycosides - Gentamicin	2	11	0											4		6		1									
Aminoglycosides - Kanamycin	8	11	0																			11					
Penicillins - Ampicillin	4	11	1													5		5									
Cephalosporins - Cefotaxim	0.5	11	0							11																	
Cephalosporins - Ceftazidim	2	11	0											11													
Sulphonamides - Sulfamethoxazol	256	11	11																								



Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Indiana	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					11													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		3																4	64
Trimethoprim			11															0.5	32
Aminoglycosides - Streptomycin		5		6														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													11					8	1024

**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]**

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

S. enterica subsp. enterica, rough	Meat from bovine animals - unspecified - Surveillance																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16		
Amphenicols - Chloramphenicol	16	1	0																						1			
Amphenicols - Florfenicol	16	1	0																						1			
Tetracyclines - Tetracycline	8	1	1																									
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																				
Quinolones - Nalidixic acid	16	1	0																			1						
Trimethoprim	2	1	0													1												
Aminoglycosides - Streptomycin	32	1	1																									
Aminoglycosides - Gentamicin	2	1	0													1												
Aminoglycosides - Kanamycin	8	1	0																			1						
Penicillins - Ampicillin	4	1	1																									
Cephalosporins - Cefotaxim	0.5	1	0									1																
Cephalosporins - Ceftazidim	2	1	0													1												
Sulphonamides - Sulfamethoxazol	256	1	1																									

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Saintpaul	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	1													1											
Quinolones - Nalidixic acid	16	1	0																								1
Trimethoprim	2	1	0														1										
Aminoglycosides - Streptomycin	32	1	1																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																				1				
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Saintpaul	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

**Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

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

Other serovars	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	66																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	21	0																			12		8		1	
Amphenicols - Florfenicol	16	21	0																	1		19				1	
Tetracyclines - Tetracycline	8	21	17																	3		1					
Fluoroquinolones - Ciprofloxacin	0.06	21	12			3		5		1				4		7									1		
Quinolones - Nalidixic acid	16	21	8																			7		2		4	
Trimethoprim	2	21	0													20		1									
Aminoglycosides - Streptomycin	32	21	15																					4		2	
Aminoglycosides - Gentamicin	2	21	2											3		15		1									
Aminoglycosides - Kanamycin	8	21	4																			17					
Penicillins - Ampicillin	4	21	6															14		1							
Cephalosporins - Cefotaxim	0.5	21	0							12		7		2													
Cephalosporins - Ceftazidim	2	21	0											18		3											
Sulphonamides - Sulfamethoxazol	256	21	6																								

Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin  
- Monitoring - quantitative data [ Dilution method ]

Other serovars	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				9	8													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		3			5													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				4		9	2											2	128
Aminoglycosides - Gentamicin		1	1															0.25	32
Aminoglycosides - Kanamycin						1	3											4	128
Penicillins - Ampicillin			6															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		7		7		1							6					8	1024

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Eggs - table eggs - at retail - Monitoring - quantitative data [ Dilution method ]

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

S. Enteritidis	Eggs - table eggs - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	11	0																			4		7			
Amphenicols - Florfenicol	16	11	0																			10		1			
Tetracyclines - Tetracycline	8	11	0															2		9							
Fluoroquinolones - Ciprofloxacin	0.06	11	0			4		7																			
Quinolones - Nalidixic acid	16	11	0																			11					
Trimethoprim	2	11	0													11											
Aminoglycosides - Streptomycin	32	11	0																		3		7			1	
Aminoglycosides - Gentamicin	2	11	0											11													
Aminoglycosides - Kanamycin	8	11	0																			11					
Penicillins - Ampicillin	4	11	1													1		8		1							
Cephalosporins - Cefotaxim	0.5	11	0							8		3															
Cephalosporins - Ceftazidim	2	11	0											11													
Sulphonamides - Sulfamethoxazol	256	11	0																								



Table Antimicrobial susceptibility testing of *S. Enteritidis* in Eggs - table eggs - at retail - Monitoring - quantitative data [ Dilution method ]

S. Enteritidis  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Eggs - table eggs - at retail - Monitoring																		
	11																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		9		1												8	1024

Table Antimicrobial susceptibility testing of S. Dublin in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Dublin	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																			1				1	
Amphenicols - Florfenicol	16	2	0																			1				1	
Tetracyclines - Tetracycline	8	2	0															1				1					
Fluoroquinolones - Ciprofloxacin	0.06	2	0			1				1																	
Quinolones - Nalidixic acid	16	2	0																			1		1			
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																					2			
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0													1					1						
Cephalosporins - Cefotaxim	0.5	2	0							1				1													
Cephalosporins - Ceftazidim	2	2	0											1		1											
Sulphonamides - Sulfamethoxazol	256	2	0																							1	

Table Antimicrobial susceptibility testing of S. Dublin in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Dublin  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from bovine animals - unspecified - Surveillance																		
	40																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of *S. London* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. London	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	6	0																			1		5			
Amphenicols - Florfenicol	16	6	0																			6					
Tetracyclines - Tetracycline	8	6	0															1		5							
Fluoroquinolones - Ciprofloxacin	0.06	6	0			5		1																			
Quinolones - Nalidixic acid	16	6	0																			6					
Trimethoprim	2	6	0													6											
Aminoglycosides - Streptomycin	32	6	0																			1		4		1	
Aminoglycosides - Gentamicin	2	6	0											5		1											
Aminoglycosides - Kanamycin	8	6	0																			6					
Penicillins - Ampicillin	4	6	0													6											
Cephalosporins - Cefotaxim	0.5	6	0							6																	
Cephalosporins - Ceftazidim	2	6	0											6													
Sulphonamides - Sulfamethoxazol	256	6	0																								

Table Antimicrobial susceptibility testing of *S. London* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. London	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				5		1												8	1024

Table Antimicrobial susceptibility testing of S. Livingstone in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Livingstone	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																						2		
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																								1
Aminoglycosides - Gentamicin	2	2	0													1				1							
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0																2								
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0													2											
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of S. Livingstone in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Livingstone	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

**Table Antimicrobial susceptibility testing of *S. Newport* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Newport	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	2	0																			1		1			
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	2																								
Fluoroquinolones - Ciprofloxacin	0.06	2	1					1						1													
Quinolones - Nalidixic acid	16	2	1																			1					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	1																							1	
Aminoglycosides - Gentamicin	2	2	0											1		1											
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	1															1									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								



Table Antimicrobial susceptibility testing of *S. Newport* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Newport	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1				1												8	1024

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Paratyphi B var. Java	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	25	6																			6		11		2	
Amphenicols - Florfenicol	16	25	2																			11		8		4	
Tetracyclines - Tetracycline	8	25	13															1		9		2					
Fluoroquinolones - Ciprofloxacin	0.06	25	24					1						14		9		1									
Quinolones - Nalidixic acid	16	25	24																			1					
Trimethoprim	2	25	25																								
Aminoglycosides - Streptomycin	32	25	13																								
Aminoglycosides - Gentamicin	2	25	2											22		1									1		
Aminoglycosides - Kanamycin	8	25	1																			24					
Penicillins - Ampicillin	4	25	19															1		5							
Cephalosporins - Cefotaxim	0.5	25	1							1		9		14									1				
Cephalosporins - Ceftazidim	2	25	1													22		2								1	
Sulphonamides - Sulfamethoxazol	256	25	20																							1	

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Paratyphi B var. Java	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					6													2	64
Amphenicols - Florfenicol		2																2	64
Tetracyclines - Tetracycline					13													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					24													4	64
Trimethoprim			25															0.5	32
Aminoglycosides - Streptomycin		12		7		5	1											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			19															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		4											20					8	1024

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Senftenberg	Meat from turkey - fresh - at retail - Monitoring																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16		
Amphenicols - Chloramphenicol	16	1	0																						1			
Amphenicols - Florfenicol	16	1	0																						1			
Tetracyclines - Tetracycline	8	1	0																	1								
Fluoroquinolones - Ciprofloxacin	0.06	1	1													1												
Quinolones - Nalidixic acid	16	1	1																									
Trimethoprim	2	1	0													1												
Aminoglycosides - Streptomycin	32	1	0																						1			
Aminoglycosides - Gentamicin	2	1	0											1														
Aminoglycosides - Kanamycin	8	1	0																			1						
Penicillins - Ampicillin	4	1	0															1										
Cephalosporins - Cefotaxim	0.5	1	0									1																
Cephalosporins - Ceftazidim	2	1	0											1														
Sulphonamides - Sulfamethoxazol	256	1	0																									

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

S. Senftenberg	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol						1												8	1024

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Paratyphi B var. Java	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																								1
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	1															1									
Quinolones - Nalidixic acid	16	1	1																								
Trimethoprim	2	1	1																								
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	1																								
Penicillins - Ampicillin	4	1	0																		1						
Cephalosporins - Cefotaxim	0.5	1	0													1											
Cephalosporins - Ceftazidim	2	1	0																1								
Sulphonamides - Sulfamethoxazol	256	1	1																								

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Paratyphi B var. Java	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Enteritidis	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																			1					
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0																1								
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								



Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Enteritidis  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - unspecified - Surveillance																		
	93																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. Enteritidis	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	12	0																			1		9		2	
Amphenicols - Florfenicol	16	12	0																			7		3		2	
Tetracyclines - Tetracycline	8	12	0																	11		1					
Fluoroquinolones - Ciprofloxacin	0.06	12	1			3		6		2				1													
Quinolones - Nalidixic acid	16	12	1																			11					
Trimethoprim	2	12	0													12											
Aminoglycosides - Streptomycin	32	12	0																		7		5				
Aminoglycosides - Gentamicin	2	12	0											11		1											
Aminoglycosides - Kanamycin	8	12	0																			12					
Penicillins - Ampicillin	4	12	0															9		1		2					
Cephalosporins - Cefotaxim	0.5	12	0							4		5		2		1											
Cephalosporins - Ceftazidim	2	12	0											10		1		1									
Sulphonamides - Sulfamethoxazol	256	12	0																								

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Enteritidis	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	103																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		9		1												8	1024

**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	76																										
	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	4	0																			3		1			
Amphenicols - Florfenicol	16	4	0																			3		1			
Tetracyclines - Tetracycline	8	4	4																								
Fluoroquinolones - Ciprofloxacin	0.06	4	0			2		2																			
Quinolones - Nalidixic acid	16	4	0																			4					
Trimethoprim	2	4	0												4												
Aminoglycosides - Streptomycin	32	4	2																					1		1	
Aminoglycosides - Gentamicin	2	4	0											3		1											
Aminoglycosides - Kanamycin	8	4	0																			4					
Penicillins - Ampicillin	4	4	2															2									
Cephalosporins - Cefotaxim	0.5	4	0							4																	
Cephalosporins - Ceftazidim	2	4	0											4													
Sulphonamides - Sulfamethoxazol	256	4	2																								

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	76																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						2												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1									2					8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	7	3																			1		3			
Amphenicols - Florfenicol	16	7	3																			2		2			
Tetracyclines - Tetracycline	8	7	4																	3							
Fluoroquinolones - Ciprofloxacin	0.06	7	0			2		5																			
Quinolones - Nalidixic acid	16	7	0																			7					
Trimethoprim	2	7	0													7											
Aminoglycosides - Streptomycin	32	7	4																					2		1	
Aminoglycosides - Gentamicin	2	7	0											3		4											
Aminoglycosides - Kanamycin	8	7	0																			7					
Penicillins - Ampicillin	4	7	4															2		1							
Cephalosporins - Cefotaxim	0.5	7	0							4		3															
Cephalosporins - Ceftazidim	2	7	0											7													
Sulphonamides - Sulfamethoxazol	256	7	4																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Typhimurium	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					3													2	64
Amphenicols - Florfenicol		2		1														2	64
Tetracyclines - Tetracycline		2		1	1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						3	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				3									4					8	1024

**Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

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

S. Saintpaul	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	16	0																						3		13
Amphenicols - Florfenicol	16	16	0																			2		2			12
Tetracyclines - Tetracycline	8	16	3																	2		11					
Fluoroquinolones - Ciprofloxacin	0.06	16	14					1		1				2		1		11									
Quinolones - Nalidixic acid	16	16	13																			1		1			1
Trimethoprim	2	16	0													10		6									
Aminoglycosides - Streptomycin	32	16	13																						2		
Aminoglycosides - Gentamicin	2	16	11											4				1							3		7
Aminoglycosides - Kanamycin	8	16	11																			5					
Penicillins - Ampicillin	4	16	13															2		1							
Cephalosporins - Cefotaxim	0.5	16	0							2		2		9		3											
Cephalosporins - Ceftazidim	2	16	0											1		9		6									
Sulphonamides - Sulfamethoxazol	256	16	13																								



Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Saintpaul	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					3													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					13													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1		10		3												2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin		10					1											4	128
Penicillins - Ampicillin			13															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				3									13					8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																						1		
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0																		1						
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Typhimurium	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

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

S. Typhimurium	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	5	2																			1		2			
Amphenicols - Florfenicol	16	5	2																			1		2			
Tetracyclines - Tetracycline	8	5	4																	1							
Fluoroquinolones - Ciprofloxacin	0.06	5	4					1						4													
Quinolones - Nalidixic acid	16	5	4																			1					
Trimethoprim	2	5	2													3											
Aminoglycosides - Streptomycin	32	5	5																								
Aminoglycosides - Gentamicin	2	5	1											2		2											
Aminoglycosides - Kanamycin	8	5	1																			4				1	
Penicillins - Ampicillin	4	5	4															1									
Cephalosporins - Cefotaxim	0.5	5	2							1		2											2				
Cephalosporins - Ceftazidim	2	5	2											3								2					
Sulphonamides - Sulfamethoxazol	256	5	5																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

S. Typhimurium	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					2													2	64
Amphenicols - Florfenicol				2														2	64
Tetracyclines - Tetracycline		2			2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					4													4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin						2	3											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													5					8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from pig - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from pig - unspecified - Surveillance																										
	150																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	6	2																			1		3			
Amphenicols - Florfenicol	16	6	1																			1		3		1	
Tetracyclines - Tetracycline	8	6	4															1				1					
Fluoroquinolones - Ciprofloxacin	0.06	6	1					4		1				1													
Quinolones - Nalidixic acid	16	6	1																			4		1			
Trimethoprim	2	6	2													4											
Aminoglycosides - Streptomycin	32	6	5																								
Aminoglycosides - Gentamicin	2	6	0											3		1		2									
Aminoglycosides - Kanamycin	8	6	0																			6					
Penicillins - Ampicillin	4	6	4															1		1							
Cephalosporins - Cefotaxim	0.5	6	0							1		4				1											
Cephalosporins - Ceftazidim	2	6	0											2		3		1									
Sulphonamides - Sulfamethoxazol	256	6	5																								

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from pig - unspecified - Surveillance - quantitative data [Dilution method ]

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Meat from pig - unspecified - Surveillance																		
	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		1			1													2	64
Amphenicols - Florfenicol		1																2	64
Tetracyclines - Tetracycline					4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		1				1	4											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1											5					8	1024

**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

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

S. enterica subsp. enterica, rough	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																						1		
Aminoglycosides - Gentamicin	2	1	0													1											
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								



**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

<b>S. enterica subsp. enterica, rough</b> Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	66																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. enterica subsp. enterica, rough	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																		1						
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

**Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

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

S. Infantis	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			1		1			
Tetracyclines - Tetracycline	8	2	0															1		1							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																					1		1	
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0											1		1											
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Infantis	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Livingstone	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																				1				
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																						1		
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																				1				
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

S. Livingstone	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

**Table Antimicrobial susceptibility testing of *S. Derby* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Derby	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	12	0																						10		2
Amphenicols - Florfenicol	16	12	0																			4		8			
Tetracyclines - Tetracycline	8	12	2																	10							
Fluoroquinolones - Ciprofloxacin	0.06	12	0			2		10																			
Quinolones - Nalidixic acid	16	12	0																			12					
Trimethoprim	2	12	1													11											
Aminoglycosides - Streptomycin	32	12	1																						8		3
Aminoglycosides - Gentamicin	2	12	0											10		2											
Aminoglycosides - Kanamycin	8	12	0																			12					
Penicillins - Ampicillin	4	12	1													1		10									
Cephalosporins - Cefotaxim	0.5	12	0							2		8		2													
Cephalosporins - Ceftazidim	2	12	0											3		9											
Sulphonamides - Sulfamethoxazol	256	12	1																								



Table Antimicrobial susceptibility testing of *S. Derby* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Derby	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		3		8									1					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from pig - unspecified - Surveillance																										
	150																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	49	5																			2		38		4	
Amphenicols - Florfenicol	16	49	4																			20		21		4	
Tetracyclines - Tetracycline	8	49	35																	11		2		1			
Fluoroquinolones - Ciprofloxacin	0.06	49	2			6		39		2		1				1											
Quinolones - Nalidixic acid	16	49	1																			45		2		1	
Trimethoprim	2	49	8													40		1									
Aminoglycosides - Streptomycin	32	49	36																					5		5	
Aminoglycosides - Gentamicin	2	49	2											32		15										2	
Aminoglycosides - Kanamycin	8	49	0																			49					
Penicillins - Ampicillin	4	49	40															8		1							
Cephalosporins - Cefotaxim	0.5	49	0							35		13		1													
Cephalosporins - Ceftazidim	2	49	0											44		5											
Sulphonamides - Sulfamethoxazol	256	49	38																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from pig - unspecified - Surveillance																		
	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					5													2	64
Amphenicols - Florfenicol		1			3													2	64
Tetracyclines - Tetracycline					35													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			8															0.5	32
Aminoglycosides - Streptomycin		3				5	31											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			40															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		9		1							38					8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. Livingstone	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	8	0																						8		
Amphenicols - Florfenicol	16	8	0																			3		5			
Tetracyclines - Tetracycline	8	8	0															1		7							
Fluoroquinolones - Ciprofloxacin	0.06	8	0			6		2																			
Quinolones - Nalidixic acid	16	8	0																			8					
Trimethoprim	2	8	0													8											
Aminoglycosides - Streptomycin	32	8	0																			6		2			
Aminoglycosides - Gentamicin	2	8	0											8													
Aminoglycosides - Kanamycin	8	8	0																			8					
Penicillins - Ampicillin	4	8	1															7									
Cephalosporins - Cefotaxim	0.5	8	0							8																	
Cephalosporins - Ceftazidim	2	8	0											8													
Sulphonamides - Sulfamethoxazol	256	8	1																								

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Livingstone	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		6									1					8	1024

**Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Infantis	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	6	0																						6		
Amphenicols - Florfenicol	16	6	0																			3		3			
Tetracyclines - Tetracycline	8	6	0															3		3							
Fluoroquinolones - Ciprofloxacin	0.06	6	0			1		5																			
Quinolones - Nalidixic acid	16	6	0																			6					
Trimethoprim	2	6	0													6											
Aminoglycosides - Streptomycin	32	6	0																						2		4
Aminoglycosides - Gentamicin	2	6	0											2		4											
Aminoglycosides - Kanamycin	8	6	0																			6					
Penicillins - Ampicillin	4	6	0															5		1							
Cephalosporins - Cefotaxim	0.5	6	0						1		5																
Cephalosporins - Ceftazidim	2	6	0											1		5											
Sulphonamides - Sulfamethoxazol	256	6	0																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Infantis	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		3		2												8	1024

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																							1	
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								



Table Antimicrobial susceptibility testing of *S. Enteritidis* in Meat from bovine animals - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Enteritidis	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method]

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

S. Indiana	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																			2					
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	0															2									
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																					2			
Aminoglycosides - Gentamicin	2	2	0											1		1											
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0													2											
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. Indiana* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Indiana	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

S. Indiana

Isolates out of a monitoring program (yes/no)

Number of isolates available in the laboratory

103

Meat from broilers (*Gallus gallus*) - unspecified - Surveillance

Antimicrobials:

Amphenicols - Chloramphenicol

Amphenicols - Florfenicol

Tetracyclines - Tetracycline

Fluoroquinolones - Ciprofloxacin

Quinolones - Nalidixic acid

Trimethoprim

Aminoglycosides - Streptomycin

Aminoglycosides - Gentamicin

Aminoglycosides - Kanamycin

Penicillins - Ampicillin

Cephalosporins - Cefotaxim

Cephalosporins - Cefazidim

Sulphonamides - Sulfamethoxazol

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Newport	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	1																								
Aminoglycosides - Gentamicin	2	1	0													1											
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0											1													
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	1																								

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Newport	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

## Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Saintpaul	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	3	1																						1		1
Amphenicols - Florfenicol	16	3	1																				1				1
Tetracyclines - Tetracycline	8	3	0															1					1		1		
Fluoroquinolones - Ciprofloxacin	0.06	3	3											1				2									
Quinolones - Nalidixic acid	16	3	3																								
Trimethoprim	2	3	1													1		1									
Aminoglycosides - Streptomycin	32	3	1																						1		
Aminoglycosides - Gentamicin	2	3	1											1		1									1		
Aminoglycosides - Kanamycin	8	3	1																				2				
Penicillins - Ampicillin	4	3	2															1									
Cephalosporins - Cefotaxim	0.5	3	0									1		1		1											
Cephalosporins - Ceftazidim	2	3	0											1		1		1									
Sulphonamides - Sulfamethoxazol	256	3	2																								1

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from other animal species or not specified - minced meat - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Saintpaul	Meat from other animal species or not specified - minced meat - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol				1														2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					3													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		1		1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1																4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													2					8	1024

S. Saintpaul

Isolates out of a monitoring program (yes/no)

Number of isolates available in the laboratory

76

Antimicrobials:

Amphenicols - Chloramphenicol

Amphenicols - Florfenicol

Tetracyclines - Tetracycline

Fluoroquinolones - Ciprofloxacin

Quinolones - Nalidixic acid

Trimethoprim

Aminoglycosides - Streptomycin

Aminoglycosides - Gentamicin

Aminoglycosides - Kanamycin

Penicillins - Ampicillin

Cephalosporins - Cefotaxim

Cephalosporins - Ceftazidim

Sulphonamides - Sulfamethoxazol

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from bovine animals - unspecified - Surveillance - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Paratyphi B var. Java	Meat from bovine animals - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	1											1													
Quinolones - Nalidixic acid	16	1	1																								
Trimethoprim	2	1	1																								
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	1																								



Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Meat from bovine animals - unspecified - Surveillance - quantitative data [Dilution method ]

S. Paratyphi B var. Java	Meat from bovine animals - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. Saintpaul	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																								1
Amphenicols - Florfenicol	16	1	0																								1
Tetracyclines - Tetracycline	8	1	0																			1					
Fluoroquinolones - Ciprofloxacin	0.06	1	1															1									
Quinolones - Nalidixic acid	16	1	1															1									
Trimethoprim	2	1	0															1									
Aminoglycosides - Streptomycin	32	1	1																								
Aminoglycosides - Gentamicin	2	1	1																						1		
Aminoglycosides - Kanamycin	8	1	1																								
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0											1													
Cephalosporins - Ceftazidim	2	1	0																1								
Sulphonamides - Sulfamethoxazol	256	1	1																								

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Saintpaul	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1																4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

Other serovars	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	12	0																			1		11			
Amphenicols - Florfenicol	16	12	0																			5		7			
Tetracyclines - Tetracycline	8	12	2																	10							
Fluoroquinolones - Ciprofloxacin	0.06	12	0			7		5																			
Quinolones - Nalidixic acid	16	12	0																			12					
Trimethoprim	2	12	0													12											
Aminoglycosides - Streptomycin	32	12	3																					8		1	
Aminoglycosides - Gentamicin	2	12	0											6		5		1									
Aminoglycosides - Kanamycin	8	12	1																			11					
Penicillins - Ampicillin	4	12	1													3		8									
Cephalosporins - Cefotaxim	0.5	12	0							9		3															
Cephalosporins - Ceftazidim	2	12	0											9		3											
Sulphonamides - Sulfamethoxazol	256	12	0																								

Table Antimicrobial susceptibility testing of Other serovars in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

Other serovars	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				2														1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				1			2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1																4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		8		3												8	1024

## Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	10	4																			3		3			
Amphenicols - Florfenicol	16	10	4																			6					
Tetracyclines - Tetracycline	8	10	9																	1						3	
Fluoroquinolones - Ciprofloxacin	0.06	10	0			4		6																			
Quinolones - Nalidixic acid	16	10	0																			10					
Trimethoprim	2	10	0													9		1									
Aminoglycosides - Streptomycin	32	10	5																					4		1	
Aminoglycosides - Gentamicin	2	10	0											5		5											
Aminoglycosides - Kanamycin	8	10	0																			10					
Penicillins - Ampicillin	4	10	5															5									
Cephalosporins - Cefotaxim	0.5	10	0							8		1		1													
Cephalosporins - Ceftazidim	2	10	0											8		2											
Sulphonamides - Sulfamethoxazol	256	10	5																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

S. Typhimurium	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Ampenicols - Chloramphenicol					4													2	64
Ampenicols - Florfenicol		3		1														2	64
Tetracyclines - Tetracycline		4		1	1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				3		1	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			5															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1		4							5					8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. Typhimurium	Meat from turkey - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	33	28																						5		
Amphenicols - Florfenicol	16	33	27																			3		2		1	
Tetracyclines - Tetracycline	8	33	28																	5							
Fluoroquinolones - Ciprofloxacin	0.06	33	23			6		4						23													
Quinolones - Nalidixic acid	16	33	23																			10					
Trimethoprim	2	33	1													32											
Aminoglycosides - Streptomycin	32	33	29																						3		
Aminoglycosides - Gentamicin	2	33	3											27		3									2		1
Aminoglycosides - Kanamycin	8	33	2																			31					
Penicillins - Ampicillin	4	33	30															2		1							
Cephalosporins - Cefotaxim	0.5	33	0							8		21		4													
Cephalosporins - Ceftazidim	2	33	0											23		10											
Sulphonamides - Sulfamethoxazol	256	33	30																								



Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from turkey - unspecified - Surveillance - quantitative data [ Dilution method ]

S. Typhimurium	Meat from turkey - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					28													2	64
Amphenicols - Florfenicol		1		22	4													2	64
Tetracyclines - Tetracycline		16		11	1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					23													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		1		23		5	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							2											4	128
Penicillins - Ampicillin			30															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				3									30					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

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

Other serovars	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	14	1																			3		9		1	
Amphenicols - Florfenicol	16	14	1																			9		4			
Tetracyclines - Tetracycline	8	14	12																	2							
Fluoroquinolones - Ciprofloxacin	0.06	14	10			3		1				1		3				1							5		
Quinolones - Nalidixic acid	16	14	10																			4					
Trimethoprim	2	14	1													13											
Aminoglycosides - Streptomycin	32	14	8																					2		1	
Aminoglycosides - Gentamicin	2	14	5											6		3										4	
Aminoglycosides - Kanamycin	8	14	4																			10					
Penicillins - Ampicillin	4	14	9															5									
Cephalosporins - Cefotaxim	0.5	14	0							4		9		1													
Cephalosporins - Ceftazidim	2	14	0											6		6		2									
Sulphonamides - Sulfamethoxazol	256	14	9																							1	

Table Antimicrobial susceptibility testing of Other serovars in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

Other serovars	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol					1													2	64
Tetracyclines - Tetracycline				4	8													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					10													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		3		5		2	1											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							4											4	128
Penicillins - Ampicillin			9															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		2		1							9					8	1024

Table Antimicrobial susceptibility testing of S. Newport in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

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

S. Newport	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	6	0																			2		4			
Amphenicols - Florfenicol	16	6	0																			5		1			
Tetracyclines - Tetracycline	8	6	5																	1							
Fluoroquinolones - Ciprofloxacin	0.06	6	1			1		4								1											
Quinolones - Nalidixic acid	16	6	1																			5					
Trimethoprim	2	6	0													6											
Aminoglycosides - Streptomycin	32	6	0																					3		3	
Aminoglycosides - Gentamicin	2	6	0											2		3		1									
Aminoglycosides - Kanamycin	8	6	0																			6					
Penicillins - Ampicillin	4	6	5															1									
Cephalosporins - Cefotaxim	0.5	6	0							4		1		1													
Cephalosporins - Ceftazidim	2	6	0											5		1											
Sulphonamides - Sulfamethoxazol	256	6	0																								

Table Antimicrobial susceptibility testing of *S. Newport* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

S. Newport	Meat from turkey - fresh - at retail - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					5													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		1																4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			5															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		4		1												8	1024

**Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Livingstone	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																				1				
Amphenicols - Florfenicol	16	1	0																				1				
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																				1				
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																				1				
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																				1				
Penicillins - Ampicillin	4	1	0																		1						
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Livingstone* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin  
- Monitoring - quantitative data [ Dilution method ]

S. Livingstone	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of S. London in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

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

S. London	Meat from pig - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	7	0																			5		2			
Amphenicols - Florfenicol	16	7	0																			7					
Tetracyclines - Tetracycline	8	7	1															2		4							
Fluoroquinolones - Ciprofloxacin	0.06	7	0			3		4																			
Quinolones - Nalidixic acid	16	7	0																			6		1			
Trimethoprim	2	7	1													6											
Aminoglycosides - Streptomycin	32	7	1																			1		5			
Aminoglycosides - Gentamicin	2	7	0											5		2											
Aminoglycosides - Kanamycin	8	7	0																			7					
Penicillins - Ampicillin	4	7	1															6									
Cephalosporins - Cefotaxim	0.5	7	0							7																	
Cephalosporins - Ceftazidim	2	7	0											6		1											
Sulphonamides - Sulfamethoxazol	256	7	1																								



Table Antimicrobial susceptibility testing of S. London in Meat from pig - unspecified - Surveillance - quantitative data [ Dilution method ]

S. London	Meat from pig - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	150																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		5									1					8	1024

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

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

S. Infantis	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	11	0																			2		7		2	
Amphenicols - Florfenicol	16	11	0																			4		6		1	
Tetracyclines - Tetracycline	8	11	6															1		4							
Fluoroquinolones - Ciprofloxacin	0.06	11	7			1		3						2		3		2									
Quinolones - Nalidixic acid	16	11	7																			4					
Trimethoprim	2	11	0													11											
Aminoglycosides - Streptomycin	32	11	3																						5		
Aminoglycosides - Gentamicin	2	11	0											11													
Aminoglycosides - Kanamycin	8	11	0																			11					
Penicillins - Ampicillin	4	11	1															7		3							
Cephalosporins - Cefotaxim	0.5	11	0									9		2													
Cephalosporins - Ceftazidim	2	11	0											3		8											
Sulphonamides - Sulfamethoxazol	256	11	6																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Meat from broilers (*Gallus gallus*) - unspecified - Surveillance - quantitative data [Dilution method ]

S. Infantis	Meat from broilers ( <i>Gallus gallus</i> ) - unspecified - Surveillance																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					6													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					7													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		3		2		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin		1																0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		2		1							6					8	1024

**Table Antimicrobial susceptibility testing of Other serovars in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]**

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

Other serovars	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	5	0																			2		3			
Amphenicols - Florfenicol	16	5	0																	1		2		2			
Tetracyclines - Tetracycline	8	5	5																								
Fluoroquinolones - Ciprofloxacin	0.06	5	1			1		3																	1		
Quinolones - Nalidixic acid	16	5	1																			4					
Trimethoprim	2	5	0													5											
Aminoglycosides - Streptomycin	32	5	5																								
Aminoglycosides - Gentamicin	2	5	1											2		1		1								1	
Aminoglycosides - Kanamycin	8	5	0																			5					
Penicillins - Ampicillin	4	5	4													1											
Cephalosporins - Cefotaxim	0.5	5	0							3		2															
Cephalosporins - Ceftazidim	2	5	0											4				1									
Sulphonamides - Sulfamethoxazol	256	5	4																								

Table Antimicrobial susceptibility testing of Other serovars in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]

Other serovars	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				2		1	2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1											4					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

Other serovars	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	22	0																			4		17		1	
Amphenicols - Florfenicol	16	22	0																			16		5		1	
Tetracyclines - Tetracycline	8	22	3															2		16		1					
Fluoroquinolones - Ciprofloxacin	0.06	22	2	1		13		5		1				2													
Quinolones - Nalidixic acid	16	22	2																			20					
Trimethoprim	2	22	0													22											
Aminoglycosides - Streptomycin	32	22	3																			4		10		5	
Aminoglycosides - Gentamicin	2	22	0											11		9		2									
Aminoglycosides - Kanamycin	8	22	0																			22					
Penicillins - Ampicillin	4	22	6													1		14		1							
Cephalosporins - Cefotaxim	0.5	22	4							9		7		2									4				
Cephalosporins - Ceftazidim	2	22	4											11		7										1	
Sulphonamides - Sulfamethoxazol	256	22	1																							1	

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

Other serovars	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				2		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			6															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim	3																	0.25	16
Sulphonamides - Sulfamethoxazol		10		9		1							1					8	1024

Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. Anatum	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	6	0																						6		
Amphenicols - Florfenicol	16	6	0																			4		2			
Tetracyclines - Tetracycline	8	6	2																	4							
Fluoroquinolones - Ciprofloxacin	0.06	6	0			4		2																			
Quinolones - Nalidixic acid	16	6	0																			6					
Trimethoprim	2	6	2													4											
Aminoglycosides - Streptomycin	32	6	0																						1	3	
Aminoglycosides - Gentamicin	2	6	0											6													
Aminoglycosides - Kanamycin	8	6	2																			4					
Penicillins - Ampicillin	4	6	0															6									
Cephalosporins - Cefotaxim	0.5	6	0									6															
Cephalosporins - Ceftazidim	2	6	0											1		5											
Sulphonamides - Sulfamethoxazol	256	6	2																								



Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

S. Anatum	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	26																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		2																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin				1		1												4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				4									2					8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Livingstone	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	5	0																						5		
Amphenicols - Florfenicol	16	5	0																						5		
Tetracyclines - Tetracycline	8	5	0																	5							
Fluoroquinolones - Ciprofloxacin	0.06	5	0			5																					
Quinolones - Nalidixic acid	16	5	0																			5					
Trimethoprim	2	5	0													5											
Aminoglycosides - Streptomycin	32	5	0																			2		3			
Aminoglycosides - Gentamicin	2	5	0											5													
Aminoglycosides - Kanamycin	8	5	0																			5					
Penicillins - Ampicillin	4	5	0															5									
Cephalosporins - Cefotaxim	0.5	5	0							5																	
Cephalosporins - Ceftazidim	2	5	0											5													
Sulphonamides - Sulfamethoxazol	256	5	0																								

Isolates out of a monitoring program (yes/no)  
Number of isolates available in the laboratory

217

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Livingstone	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	217																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				5														8	1024

## Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Paratyphi B var. Java	Cattle (bovine animals) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	2	1																			1					
Amphenicols - Florfenicol	16	2	0																			1		1			
Tetracyclines - Tetracycline	8	2	1																	1							
Fluoroquinolones - Ciprofloxacin	0.06	2	1					1								1											
Quinolones - Nalidixic acid	16	2	1																			1					
Trimethoprim	2	2	2																								
Aminoglycosides - Streptomycin	32	2	1																								
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	1															1									
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0													2											
Sulphonamides - Sulfamethoxazol	256	2	2																								

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Paratyphi B var. Java	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		1					1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol												1	1					8	1024

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Paratyphi B var. Java	Gallus gallus (fowl) - broilers - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16
Amphenicols - Chloramphenicol	16	5	0																			1		4		
Amphenicols - Florfenicol	16	5	0																			3		2		
Tetracyclines - Tetracycline	8	5	1															1		2		1				
Fluoroquinolones - Ciprofloxacin	0.06	5	4					1						2		1		1								
Quinolones - Nalidixic acid	16	5	4																			1				
Trimethoprim	2	5	5																							
Aminoglycosides - Streptomycin	32	5	1																							
Aminoglycosides - Gentamicin	2	5	0											5												
Aminoglycosides - Kanamycin	8	5	1																			4				
Penicillins - Ampicillin	4	5	1																		3		1			
Cephalosporins - Cefotaxim	0.5	5	0									1		4												
Cephalosporins - Ceftazidim	2	5	0													5										
Sulphonamides - Sulfamethoxazol	256	5	2																							1

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [Dilution method ]

S. Paratyphi B var. Java	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					4													4	64
Trimethoprim			5															0.5	32
Aminoglycosides - Streptomycin		4		1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2											2					8	1024

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

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

S. Enteritidis	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	91	0																			22		69			
Amphenicols - Florfenicol	16	91	0																			75		16			
Tetracyclines - Tetracycline	8	91	0															24		66		1					
Fluoroquinolones - Ciprofloxacin	0.06	91	1			39		51								1											
Quinolones - Nalidixic acid	16	91	1																			90					
Trimethoprim	2	91	1													88		2									
Aminoglycosides - Streptomycin	32	91	0																		35		49		5	2	
Aminoglycosides - Gentamicin	2	91	0											85		6											
Aminoglycosides - Kanamycin	8	91	0																			91					
Penicillins - Ampicillin	4	91	2													1		81		7							
Cephalosporins - Cefotaxim	0.5	91	0							60		31															
Cephalosporins - Ceftazidim	2	91	0											88		3											
Sulphonamides - Sulfamethoxazol	256	91	1																					2		2	



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

S. Enteritidis  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	217																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		18		60		8							1					8	1024

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

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

S. Typhimurium	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	173	76																			12		81		4	
Amphenicols - Florfenicol	16	173	62																	1		52		49		9	
Tetracyclines - Tetracycline	8	173	140															3		30							
Fluoroquinolones - Ciprofloxacin	0.06	173	3			52		107		11		1		1		1											
Quinolones - Nalidixic acid	16	173	2																			156		14		1	
Trimethoprim	2	173	71													102						1					
Aminoglycosides - Streptomycin	32	173	129																					18		14	
Aminoglycosides - Gentamicin	2	173	16											94		56		7						2		11	
Aminoglycosides - Kanamycin	8	173	22																			150		1			
Penicillins - Ampicillin	4	173	138															29		6							
Cephalosporins - Cefotaxim	0.5	173	1							110		52		8		2		1									
Cephalosporins - Ceftazidim	2	173	0											154		19											
Sulphonamides - Sulfamethoxazol	256	173	147																							1	

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

S. Typhimurium	Pigs - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol				2	74													2	64
Amphenicols - Florfenicol		18		25	19													2	64
Tetracyclines - Tetracycline		26		17	97													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim			70															0.5	32
Aminoglycosides - Streptomycin		12		31		34	64											2	128
Aminoglycosides - Gentamicin		3																0.25	32
Aminoglycosides - Kanamycin						2	20											4	128
Penicillins - Ampicillin			138															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		6		17		2						1	146					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Turkey - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Saintpaul	Turkey - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	30	1																			2		19		8	
Amphenicols - Florfenicol	16	30	1																			11		12		6	
Tetracyclines - Tetracycline	8	30	21																	1		8					
Fluoroquinolones - Ciprofloxacin	0.06	30	12			5		13				1		4					7								
Quinolones - Nalidixic acid	16	30	11																			17		2			
Trimethoprim	2	30	17													11		2									
Aminoglycosides - Streptomycin	32	30	12																					1		3	
Aminoglycosides - Gentamicin	2	30	15											14		1						5		5		5	
Aminoglycosides - Kanamycin	8	30	15																			15					
Penicillins - Ampicillin	4	30	25															3		1		1					
Cephalosporins - Cefotaxim	0.5	30	0							10		12		6		2											
Cephalosporins - Ceftazidim	2	30	0											18		11		1									
Sulphonamides - Sulfamethoxazol	256	30	29																								

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

S. Saintpaul	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	121																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		1																2	64
Amphenicols - Florfenicol		1																2	64
Tetracyclines - Tetracycline				1	20													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					11													4	64
Trimethoprim			17															0.5	32
Aminoglycosides - Streptomycin		14		8		2	2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		7					8											4	128
Penicillins - Ampicillin			25															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1									29					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method ]

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

Other serovars	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	217																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	43	3																			9		29		2	
Amphenicols - Florfenicol	16	43	0																	3		19		17		4	
Tetracyclines - Tetracycline	8	43	10															6		25		2					
Fluoroquinolones - Ciprofloxacin	0.06	43	9			17		17				1		1		5		1		1							
Quinolones - Nalidixic acid	16	43	9																			34					
Trimethoprim	2	43	1													42											
Aminoglycosides - Streptomycin	32	43	5																	1		8		10		10	
Aminoglycosides - Gentamicin	2	43	0											27		15		1									
Aminoglycosides - Kanamycin	8	43	0																			43					
Penicillins - Ampicillin	4	43	8													5		26		4							
Cephalosporins - Cefotaxim	0.5	43	3							16		23		1									3				
Cephalosporins - Ceftazidim	2	43	3											22		18											
Sulphonamides - Sulfamethoxazol	256	43	6																							1	

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method ]

Other serovars	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					3													2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				5	5													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					9													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		9		3		2												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			8															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim	3																	0.25	16
Sulphonamides - Sulfamethoxazol		8		20		4		4					6					8	1024

Other serovars

Isolates out of a monitoring program (yes/no)

Number of isolates available in the laboratory

217

Antimicrobials:

Amphenicols - Chloramphenicol

Amphenicols - Florfenicol

Tetracyclines - Tetracycline

Fluoroquinolones - Ciprofloxacin

Quinolones - Nalidixic acid

Trimethoprim

Aminoglycosides - Streptomycin

Aminoglycosides - Gentamicin

Aminoglycosides - Kanamycin

Penicillins - Ampicillin

Cephalosporins - Cefotaxim

Cephalosporins - Ceftazidim

Sulphonamides - Sulfamethoxazol

Table Antimicrobial susceptibility testing of S. London in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. London	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	5	2																			2		1			
Amphenicols - Florfenicol	16	5	2																			3					
Tetracyclines - Tetracycline	8	5	2															2		1							
Fluoroquinolones - Ciprofloxacin	0.06	5	0			4		1																			
Quinolones - Nalidixic acid	16	5	0																			5					
Trimethoprim	2	5	2													2		1									
Aminoglycosides - Streptomycin	32	5	2																					1		2	
Aminoglycosides - Gentamicin	2	5	2											2		1											
Aminoglycosides - Kanamycin	8	5	2																			3					
Penicillins - Ampicillin	4	5	3													1		1									
Cephalosporins - Cefotaxim	0.5	5	1							2		1		1									1				
Cephalosporins - Ceftazidim	2	5	1											2		2						1					
Sulphonamides - Sulfamethoxazol	256	5	2																								



Table Antimicrobial susceptibility testing of S. London in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. London	Pigs - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					2													2	64
Amphenicols - Florfenicol					2													2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin							2											2	128
Aminoglycosides - Gentamicin			2															0.25	32
Aminoglycosides - Kanamycin							2											4	128
Penicillins - Ampicillin			3															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2		1							2					8	1024

Table Antimicrobial susceptibility testing of *S. Infantis* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Infantis	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																					1			
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Infantis	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of *S. Indiana* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Indiana	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	1																								
Aminoglycosides - Streptomycin	32	1	1																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	1																								

Table Antimicrobial susceptibility testing of *S. Indiana* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Indiana	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1														1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin							1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]

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

Other serovars	Turkeys - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	1	0																						1	
Amphenicols - Florfenicol	16	1	0																			1				
Tetracyclines - Tetracycline	8	1	1																							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																		
Quinolones - Nalidixic acid	16	1	0																			1				
Trimethoprim	2	1	0													1										
Aminoglycosides - Streptomycin	32	1	1																							
Aminoglycosides - Gentamicin	2	1	0													1										
Aminoglycosides - Kanamycin	8	1	0																			1				
Penicillins - Ampicillin	4	1	1																							
Cephalosporins - Cefotaxim	0.5	1	0							1																
Cephalosporins - Ceftazidim	2	1	0											1												
Sulphonamides - Sulfamethoxazol	256	1	1																							

Table Antimicrobial susceptibility testing of Other serovars in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]

Other serovars	Turkeys - at farm - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
	11																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	64	
Amphenicols - Florfenicol																		2	64	
Tetracyclines - Tetracycline					1													1	64	
Fluoroquinolones - Ciprofloxacin																		0.008	8	
Quinolones - Nalidixic acid																		4	64	
Trimethoprim																		0.5	32	
Aminoglycosides - Streptomycin							1											2	128	
Aminoglycosides - Gentamicin																		0.25	32	
Aminoglycosides - Kanamycin																		4	128	
Penicillins - Ampicillin			1															0.5	32	
Cephalosporins - Cefotaxim																		0.06	4	
Cephalosporins - Ceftazidim																		0.25	16	
Sulphonamides - Sulfamethoxazol													1					8	1024	

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Saintpaul	Cattle (bovine animals) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																				1				
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																				1				
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	1																								



Table Antimicrobial susceptibility testing of *S. Saintpaul* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. Saintpaul	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

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

S. Senftenberg	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																						2		
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																						2		
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. Senftenberg	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1														8	1024

**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]**

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

S. enterica subsp. enterica, rough	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																					2			
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0											1		1											
Sulphonamides - Sulfamethoxazol	256	2	0																								

220

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1														8	1024

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

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

S. Infantis	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	7	0																			1		3		3	
Amphenicols - Florfenicol	16	7	0																			2		5			
Tetracyclines - Tetracycline	8	7	7																								
Fluoroquinolones - Ciprofloxacin	0.06	7	7											1		6											
Quinolones - Nalidixic acid	16	7	7																								
Trimethoprim	2	7	0													7											
Aminoglycosides - Streptomycin	32	7	2																								
Aminoglycosides - Gentamicin	2	7	0											5		2											
Aminoglycosides - Kanamycin	8	7	0																			7					
Penicillins - Ampicillin	4	7	0															5		2							
Cephalosporins - Cefotaxim	0.5	7	0									4		3													
Cephalosporins - Ceftazidim	2	7	0													4		3									
Sulphonamides - Sulfamethoxazol	256	7	7																								

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

S. Infantis	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	6													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					7													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		5		1		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													7					8	1024

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data  
 [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Paratyphi B var. Java	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	19	0																			5		14			
Amphenicols - Florfenicol	16	19	0																			15		4			
Tetracyclines - Tetracycline	8	19	1															3		14		1					
Fluoroquinolones - Ciprofloxacin	0.06	19	19											18		1											
Quinolones - Nalidixic acid	16	19	19																								
Trimethoprim	2	19	19																								
Aminoglycosides - Streptomycin	32	19	5																								
Aminoglycosides - Gentamicin	2	19	0											19													
Aminoglycosides - Kanamycin	8	19	0																			18		1			
Penicillins - Ampicillin	4	19	0															7		12							
Cephalosporins - Cefotaxim	0.5	19	0									8		11													
Cephalosporins - Ceftazidim	2	19	0											1		17		1									
Sulphonamides - Sulfamethoxazol	256	19	1																						12		



Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data  
 [ Dilution method ]

S. Paratyphi B var. Java	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					19													4	64
Trimethoprim			19															0.5	32
Aminoglycosides - Streptomycin		14		4		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		6											1					8	1024

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

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

S. Typhimurium	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	15	6																						9		
Amphenicols - Florfenicol	16	15	6																			4		5			
Tetracyclines - Tetracycline	8	15	10																	5							
Fluoroquinolones - Ciprofloxacin	0.06	15	1		10		4							1													
Quinolones - Nalidixic acid	16	15	1																			14					
Trimethoprim	2	15	3													12											
Aminoglycosides - Streptomycin	32	15	10																					3	2		
Aminoglycosides - Gentamicin	2	15	0											10		5											
Aminoglycosides - Kanamycin	8	15	2																			13					
Penicillins - Ampicillin	4	15	11															4									
Cephalosporins - Cefotaxim	0.5	15	0							10		5															
Cephalosporins - Ceftazidim	2	15	0											13		2											
Sulphonamides - Sulfamethoxazol	256	15	10																								

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

S. Typhimurium	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	121																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					6													2	64
Amphenicols - Florfenicol		2		4														2	64
Tetracyclines - Tetracycline		3		3	4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin				4		3	3											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							2											4	128
Penicillins - Ampicillin			11															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2		3							10					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																										
	489																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	212	6																			7		188		11	
Amphenicols - Florfenicol	16	212	5																			101		100		6	
Tetracyclines - Tetracycline	8	212	194																	13		5					
Fluoroquinolones - Ciprofloxacin	0.06	212	6			20		172		14		6															
Quinolones - Nalidixic acid	16	212	0																			185		22		5	
Trimethoprim	2	212	9												202		1										
Aminoglycosides - Streptomycin	32	212	191																					16		4	
Aminoglycosides - Gentamicin	2	212	5											141		61		5				1					
Aminoglycosides - Kanamycin	8	212	10																			198		4		1	
Penicillins - Ampicillin	4	212	198															8		5		1		1			
Cephalosporins - Cefotaxim	0.5	212	6							140		56		9		1		1						5			
Cephalosporins - Ceftazidim	2	212	5											182		25						5					
Sulphonamides - Sulfamethoxazol	256	212	197																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																		
	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		1			5													2	64
Amphenicols - Florfenicol					5													2	64
Tetracyclines - Tetracycline					194													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			9															0.5	32
Aminoglycosides - Streptomycin		1				53	138											2	128
Aminoglycosides - Gentamicin		3	1															0.25	32
Aminoglycosides - Kanamycin		1					8											4	128
Penicillins - Ampicillin			197															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		4		11									197					8	1024

**Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]**

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - unspecified - Clinical investigations																										
	220																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	79	3																			6		70			
Amphenicols - Florfenicol	16	79	3																			50		26			
Tetracyclines - Tetracycline	8	79	51														4		24								
Fluoroquinolones - Ciprofloxacin	0.06	79	0			10		68		1																	
Quinolones - Nalidixic acid	16	79	0																			78		1			
Trimethoprim	2	79	2													77											
Aminoglycosides - Streptomycin	32	79	60																					16		2	
Aminoglycosides - Gentamicin	2	79	0											48		28		2		1							
Aminoglycosides - Kanamycin	8	79	0																			78		1			
Penicillins - Ampicillin	4	79	58													2		18		1							
Cephalosporins - Cefotaxim	0.5	79	0							51		28															
Cephalosporins - Ceftazidim	2	79	0											74		5											
Sulphonamides - Sulfamethoxazol	256	79	60																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - unspecified - Clinical investigations																		
	220																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					3													2	64
Amphenicols - Florfenicol					3													2	64
Tetracyclines - Tetracycline					51													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		1				24	36											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			58															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		17									60					8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Livingstone	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	9	0																			1		8			
Amphenicols - Florfenicol	16	9	0																			2		7			
Tetracyclines - Tetracycline	8	9	0															2		7							
Fluoroquinolones - Ciprofloxacin	0.06	9	0			7		2																			
Quinolones - Nalidixic acid	16	9	0																			9					
Trimethoprim	2	9	0													9											
Aminoglycosides - Streptomycin	32	9	0																			5		3		1	
Aminoglycosides - Gentamicin	2	9	0											7		2											
Aminoglycosides - Kanamycin	8	9	0																			9					
Penicillins - Ampicillin	4	9	1													2		6									
Cephalosporins - Cefotaxim	0.5	9	0							9																	
Cephalosporins - Ceftazidim	2	9	0											9													
Sulphonamides - Sulfamethoxazol	256	9	0																								



Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

S. Livingstone	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		7		1												8	1024

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

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

S. Infantis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0													1											
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0																		1						
Cephalosporins - Cefotaxim	0.5	1	0											1													
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	0																								

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

S. Infantis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. Livingstone	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																							1	
Aminoglycosides - Gentamicin	2	1	0													1											
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

S. Livingstone	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Gallus gallus (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	217																										
	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			1		1			
Tetracyclines - Tetracycline	8	2	1																	1							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	2																								
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	2																								
Cephalosporins - Cefotaxim	0.5	2	0									2															
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	2																								

Table Antimicrobial susceptibility testing of *S. 1,4,[5],12:i:-* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	217																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						1	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													2					8	1024

Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Anatum	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						1		1
Amphenicols - Florfenicol	16	2	0																				1				1
Tetracyclines - Tetracycline	8	2	0																	1		1					
Fluoroquinolones - Ciprofloxacin	0.06	2	0					1		1																	
Quinolones - Nalidixic acid	16	2	0																				1		1		
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																								1
Aminoglycosides - Gentamicin	2	2	0													2											
Aminoglycosides - Kanamycin	8	2	0																				2				
Penicillins - Ampicillin	4	2	0													1					1						
Cephalosporins - Cefotaxim	0.5	2	0									1		1													
Cephalosporins - Ceftazidim	2	2	0													2											
Sulphonamides - Sulfamethoxazol	256	2	0																								



Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Anatum	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1		1												8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. enterica subsp. enterica, rough	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	17	0																	2		3		9		3
Amphenicols - Florfenicol	16	17	0																	2		5		10		
Tetracyclines - Tetracycline	8	17	12															4		1						
Fluoroquinolones - Ciprofloxacin	0.06	17	12			3		2						1		10		1								
Quinolones - Nalidixic acid	16	17	12																			5				
Trimethoprim	2	17	0													16		1								
Aminoglycosides - Streptomycin	32	17	5																	2		2		1		
Aminoglycosides - Gentamicin	2	17	0											16		1										
Aminoglycosides - Kanamycin	8	17	0																			17				
Penicillins - Ampicillin	4	17	0													1		14		2						
Cephalosporins - Cefotaxim	0.5	17	0							4		8		5												
Cephalosporins - Ceftazidim	2	17	0											5		7		5								
Sulphonamides - Sulfamethoxazol	256	17	11																							1

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	11													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					12													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		7		4		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		3		1						1	10					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Saintpaul	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	8	0																			1		7			
Amphenicols - Florfenicol	16	8	0																			3		5			
Tetracyclines - Tetracycline	8	8	7																	1							
Fluoroquinolones - Ciprofloxacin	0.06	8	0			1		7																			
Quinolones - Nalidixic acid	16	8	0																			8					
Trimethoprim	2	8	7													1											
Aminoglycosides - Streptomycin	32	8	1																		1					2	
Aminoglycosides - Gentamicin	2	8	4											4								1		2		1	
Aminoglycosides - Kanamycin	8	8	3																			5					
Penicillins - Ampicillin	4	8	7															1									
Cephalosporins - Cefotaxim	0.5	8	0							4		4															
Cephalosporins - Ceftazidim	2	8	0											7		1											
Sulphonamides - Sulfamethoxazol	256	8	7																								

Table Antimicrobial susceptibility testing of *S. Saintpaul* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Saintpaul  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	217																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline		1			6													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			7															0.5	32
Aminoglycosides - Streptomycin		4						1										2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin								3										4	128
Penicillins - Ampicillin			7															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol						1							7					8	1024

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

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

S. Enteritidis	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0			1		1																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																			2					
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0																2								
Cephalosporins - Cefotaxim	0.5	2	0							1		1															
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

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

S. Enteritidis	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

Table Antimicrobial susceptibility testing of *S. Derby* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Derby	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	3	0																						3		
Amphenicols - Florfenicol	16	3	0																			1		2			
Tetracyclines - Tetracycline	8	3	1																	2							
Fluoroquinolones - Ciprofloxacin	0.06	3	0			2		1																			
Quinolones - Nalidixic acid	16	3	0																			3					
Trimethoprim	2	3	1													2											
Aminoglycosides - Streptomycin	32	3	2																						1		
Aminoglycosides - Gentamicin	2	3	0											2		1											
Aminoglycosides - Kanamycin	8	3	0																			3					
Penicillins - Ampicillin	4	3	0															3									
Cephalosporins - Cefotaxim	0.5	3	0									3															
Cephalosporins - Ceftazidim	2	3	0											1		2											
Sulphonamides - Sulfamethoxazol	256	3	2																								



Table Antimicrobial susceptibility testing of *S. Derby* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Derby	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin				1			1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1									2					8	1024

# Table Antimicrobial susceptibility testing of *S. London* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. London	Cattle (bovine animals) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	18	0																			10		7		1	
Amphenicols - Florfenicol	16	18	0																	1		16		1			
Tetracyclines - Tetracycline	8	18	0															3		14		1					
Fluoroquinolones - Ciprofloxacin	0.06	18	1			9		7		1		1															
Quinolones - Nalidixic acid	16	18	1																			16		1			
Trimethoprim	2	18	0													17		1									
Aminoglycosides - Streptomycin	32	18	0																						15	3	
Aminoglycosides - Gentamicin	2	18	0											15		3											
Aminoglycosides - Kanamycin	8	18	0																			18					
Penicillins - Ampicillin	4	18	0													4		13		1							
Cephalosporins - Cefotaxim	0.5	18	0							13		4		1													
Cephalosporins - Ceftazidim	2	18	0											17		1											
Sulphonamides - Sulfamethoxazol	256	18	0																								

**Table Antimicrobial susceptibility testing of S. London in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]**

S. London	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	220																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				12		6												8	1024

Table Antimicrobial susceptibility testing of *S. Infantis* in Turkey - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Infantis	Turkey - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	21	1																			11		9			
Amphenicols - Florfenicol	16	21	0																			15		5		1	
Tetracyclines - Tetracycline	8	21	19															1		1							
Fluoroquinolones - Ciprofloxacin	0.06	21	20					1						18		2											
Quinolones - Nalidixic acid	16	21	20																			1					
Trimethoprim	2	21	0													21											
Aminoglycosides - Streptomycin	32	21	6																					1		2	
Aminoglycosides - Gentamicin	2	21	0											21													
Aminoglycosides - Kanamycin	8	21	1																			20					
Penicillins - Ampicillin	4	21	1													3		17									
Cephalosporins - Cefotaxim	0.5	21	0							2		19															
Cephalosporins - Ceftazidim	2	21	0											6		14		1									
Sulphonamides - Sulfamethoxazol	256	21	20																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Infantis	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol				1														2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				15	4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					20													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		12		6														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1									20					8	1024

Table Antimicrobial susceptibility testing of S. Dublin in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Dublin	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	21	0																			19		2			
Amphenicols - Florfenicol	16	21	0																	3		17		1			
Tetracyclines - Tetracycline	8	21	0															8		13							
Fluoroquinolones - Ciprofloxacin	0.06	21	1	1		18		1						1													
Quinolones - Nalidixic acid	16	21	1																			20					
Trimethoprim	2	21	0													21											
Aminoglycosides - Streptomycin	32	21	0																					14		7	
Aminoglycosides - Gentamicin	2	21	0											21													
Aminoglycosides - Kanamycin	8	21	0																			21					
Penicillins - Ampicillin	4	21	0													18		2		1							
Cephalosporins - Cefotaxim	0.5	21	0							20		1															
Cephalosporins - Ceftazidim	2	21	0											20		1											
Sulphonamides - Sulfamethoxazol	256	21	0																								

Table Antimicrobial susceptibility testing of *S. Dublin* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Dublin  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - unspecified - Clinical investigations																		
	220																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		16		5														8	1024

**Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]**

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

S. Senftenberg	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0															1									
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0															1									
Aminoglycosides - Streptomycin	32	1	0																								
Aminoglycosides - Gentamicin	2	1	0													1											
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0													1											
Sulphonamides - Sulfamethoxazol	256	1	0																								



Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

S. Senftenberg	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

**Table Antimicrobial susceptibility testing of S. Typhimurium in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]**

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

S. Typhimurium	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	1																						1		
Amphenicols - Florfenicol	16	2	1																			1					
Tetracyclines - Tetracycline	8	2	1																	1							
Fluoroquinolones - Ciprofloxacin	0.06	2	0			2																					
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	2																								
Aminoglycosides - Gentamicin	2	2	1											1													
Aminoglycosides - Kanamycin	8	2	0																			1		1			
Penicillins - Ampicillin	4	2	1															1									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	2																								

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]

S. Typhimurium	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol		1																2	64
Tetracyclines - Tetracycline		1																1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				1			1											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													2					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

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

Other serovars	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	18	0																			4		14			
Amphenicols - Florfenicol	16	18	0																			13		5			
Tetracyclines - Tetracycline	8	18	1															5		12							
Fluoroquinolones - Ciprofloxacin	0.06	18	2			8		8						1		1											
Quinolones - Nalidixic acid	16	18	1																			16				1	
Trimethoprim	2	18	1													17											
Aminoglycosides - Streptomycin	32	18	0																			1		6		8	
Aminoglycosides - Gentamicin	2	18	0											13		4		1									
Aminoglycosides - Kanamycin	8	18	0																			17		1			
Penicillins - Ampicillin	4	18	0													6		12									
Cephalosporins - Cefotaxim	0.5	18	0							7		11															
Cephalosporins - Ceftazidim	2	18	0											8		10											
Sulphonamides - Sulfamethoxazol	256	18	1																					1			

Table Antimicrobial susceptibility testing of Other serovars in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

Other serovars	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin		3																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		6		10									1					8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data  
 [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Saintpaul	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	3	1																						1		1
Amphenicols - Florfenicol	16	3	0																						2		1
Tetracyclines - Tetracycline	8	3	2																			1					
Fluoroquinolones - Ciprofloxacin	0.06	3	1					1		1								1									
Quinolones - Nalidixic acid	16	3	1																			1			1		
Trimethoprim	2	3	0													2		1									
Aminoglycosides - Streptomycin	32	3	3																								
Aminoglycosides - Gentamicin	2	3	1											1		1											1
Aminoglycosides - Kanamycin	8	3	1																			2					
Penicillins - Ampicillin	4	3	1															1		1							
Cephalosporins - Cefotaxim	0.5	3	0							1				1		1											
Cephalosporins - Ceftazidim	2	3	0											1		1		1									
Sulphonamides - Sulfamethoxazol	256	3	3																								

**Table Antimicrobial susceptibility testing of S. Saintpaul in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]**

S. Saintpaul  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	11																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		1																2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				2		1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1																4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													3					8	1024

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

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

S. Enteritidis	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																			2					
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								



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

S. Enteritidis  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																		
	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			1		1			
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	1					1								1											
Quinolones - Nalidixic acid	16	2	0																			1		1			
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																		1		1				
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	1																		1						
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

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

S. Enteritidis  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	26																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				2														8	1024

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

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

S. Infantis	Gallus gallus (fowl) - broilers - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	1	0																						1	
Amphenicols - Florfenicol	16	1	0																			1				
Tetracyclines - Tetracycline	8	1	0																	1						
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																		
Quinolones - Nalidixic acid	16	1	0																			1				
Trimethoprim	2	1	0													1										
Aminoglycosides - Streptomycin	32	1	0																					1		
Aminoglycosides - Gentamicin	2	1	0													1										
Aminoglycosides - Kanamycin	8	1	0																			1				
Penicillins - Ampicillin	4	1	1																							
Cephalosporins - Cefotaxim	0.5	1	0									1														
Cephalosporins - Ceftazidim	2	1	0													1										
Sulphonamides - Sulfamethoxazol	256	1	0																							

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

S. Infantis	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. Newport* in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Newport	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																							1	
Aminoglycosides - Gentamicin	2	1	0															1									
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	1																								
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of *S. Newport* in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method ]

S. Newport	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Turkey - unspecified - Clinical investigations - quantitative data [Dilution method]

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

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkey - unspecified - Clinical investigations																										
	121																										
	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	4	0																						3		1
Amphenicols - Florfenicol	16	4	0																			2		1			1
Tetracyclines - Tetracycline	8	4	3																			1					
Fluoroquinolones - Ciprofloxacin	0.06	4	4											2		1				1							
Quinolones - Nalidixic acid	16	4	3																								1
Trimethoprim	2	4	0													4											
Aminoglycosides - Streptomycin	32	4	2																						2		
Aminoglycosides - Gentamicin	2	4	1											1		2											1
Aminoglycosides - Kanamycin	8	4	2																			2					
Penicillins - Ampicillin	4	4	2																2								
Cephalosporins - Cefotaxim	0.5	4	0							2		1		1													
Cephalosporins - Ceftazidim	2	4	0											3				1									
Sulphonamides - Sulfamethoxazol	256	4	1																								



Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Turkeys - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Turkeys - unspecified - Clinical investigations																		
	121																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					3													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				2														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin		1						1										4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		1									1					8	1024

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Cattle (bovine animals) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	220																										
	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	13	0																			4		9			
Amphenicols - Florfenicol	16	13	0																			12		1			
Tetracyclines - Tetracycline	8	13	0															3		10							
Fluoroquinolones - Ciprofloxacin	0.06	13	0			4		9																			
Quinolones - Nalidixic acid	16	13	0																			13					
Trimethoprim	2	13	0													13											
Aminoglycosides - Streptomycin	32	13	0																	2		9		2			
Aminoglycosides - Gentamicin	2	13	0											7		5		1									
Aminoglycosides - Kanamycin	8	13	0																			12		1			
Penicillins - Ampicillin	4	13	0															11		2							
Cephalosporins - Cefotaxim	0.5	13	0							6		5		2													
Cephalosporins - Ceftazidim	2	13	0											11		2											
Sulphonamides - Sulfamethoxazol	256	13	0																								

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. Enteritidis	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		3		10														8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Pigs - unspecified - Clinical investigations - quantitative data [Dilution method ]

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

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																										
	489																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	11	3																			2		3		3	
Amphenicols - Florfenicol	16	11	3																			2		5		1	
Tetracyclines - Tetracycline	8	11	7																	3		1					
Fluoroquinolones - Ciprofloxacin	0.06	11	2			2		6		1				2													
Quinolones - Nalidixic acid	16	11	2																			8		1			
Trimethoprim	2	11	0													11											
Aminoglycosides - Streptomycin	32	11	5																					4		2	
Aminoglycosides - Gentamicin	2	11	0											7		3		1									
Aminoglycosides - Kanamycin	8	11	0																			11					
Penicillins - Ampicillin	4	11	6															3		2							
Cephalosporins - Cefotaxim	0.5	11	0							5		4		2													
Cephalosporins - Ceftazidim	2	11	0											5		6											
Sulphonamides - Sulfamethoxazol	256	11	5																					1			

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Pigs - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																		
	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					3													2	64
Amphenicols - Florfenicol		1		2														2	64
Tetracyclines - Tetracycline		2		1	4													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin				3		1	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			6															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		4		1									5					8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. enterica subsp. enterica, rough	Gallus gallus (fowl) - laying hens - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	20	0																	2		11		7		
Amphenicols - Florfenicol	16	20	0																	3		16		1		
Tetracyclines - Tetracycline	8	20	0															12		8						
Fluoroquinolones - Ciprofloxacin	0.06	20	2			3		15						2												
Quinolones - Nalidixic acid	16	20	2																			18				
Trimethoprim	2	20	0													20										
Aminoglycosides - Streptomycin	32	20	0																	9		7		3		1
Aminoglycosides - Gentamicin	2	20	0											19		1										
Aminoglycosides - Kanamycin	8	20	0																			20				
Penicillins - Ampicillin	4	20	2													2		15		1						
Cephalosporins - Cefotaxim	0.5	20	2							13		5											2			
Cephalosporins - Ceftazidim	2	20	2											18												2
Sulphonamides - Sulfamethoxazol	256	20	0																							

**Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]**

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	143																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			2															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		11		9														8	1024

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

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

S. Typhimurium	Gallus gallus (fowl) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	14	0																	6		4		4			
Amphenicols - Florfenicol	16	14	0																	6		6		2			
Tetracyclines - Tetracycline	8	14	1															7		6							
Fluoroquinolones - Ciprofloxacin	0.06	14	0			3		11																			
Quinolones - Nalidixic acid	16	14	6																			8					
Trimethoprim	2	14	0													14											
Aminoglycosides - Streptomycin	32	14	1																			1		5		5	
Aminoglycosides - Gentamicin	2	14	0											12		2											
Aminoglycosides - Kanamycin	8	14	1																			12		1			
Penicillins - Ampicillin	4	14	1													5		8									
Cephalosporins - Cefotaxim	0.5	14	0							10		4															
Cephalosporins - Ceftazidim	2	14	0											7		4		3									
Sulphonamides - Sulfamethoxazol	256	14	2																					1			



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

S. Typhimurium	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		6																4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		2				1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		7		2						1	1					8	1024

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method]

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

S. Typhimurium	Cattle (bovine animals) - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	60	25																			15		20			
Amphenicols - Florfenicol	16	60	23																	2		32		3			
Tetracyclines - Tetracycline	8	60	36															1		22		1				1	
Fluoroquinolones - Ciprofloxacin	0.06	60	3			30		27						3													
Quinolones - Nalidixic acid	16	60	3																			55		2			
Trimethoprim	2	60	4													56											
Aminoglycosides - Streptomycin	32	60	34																			4		14		6	
Aminoglycosides - Gentamicin	2	60	0											43		17											
Aminoglycosides - Kanamycin	8	60	3																			55		2			
Penicillins - Ampicillin	4	60	33													1		23		3							
Cephalosporins - Cefotaxim	0.5	60	1							44		15												1			
Cephalosporins - Ceftazidim	2	60	1											55		4							1				
Sulphonamides - Sulfamethoxazol	256	60	37																							1	

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Cattle (bovine animals) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. Typhimurium	Cattle (bovine animals) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					25													2	64
Amphenicols - Florfenicol		13		10														2	64
Tetracyclines - Tetracycline		16		7	12													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					3													4	64
Trimethoprim			4															0.5	32
Aminoglycosides - Streptomycin		2		13		14	7											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							3											4	128
Penicillins - Ampicillin			33															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				13		7		2					37					8	1024

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

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

S. Typhimurium	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	11	1																			2		8			
Amphenicols - Florfenicol	16	11	1																			8		2			
Tetracyclines - Tetracycline	8	11	1																	10							
Fluoroquinolones - Ciprofloxacin	0.06	11	0			5		6																			
Quinolones - Nalidixic acid	16	11	0																			11					
Trimethoprim	2	11	1													10											
Aminoglycosides - Streptomycin	32	11	1																					7		3	
Aminoglycosides - Gentamicin	2	11	0											5		5		1									
Aminoglycosides - Kanamycin	8	11	0																			11					
Penicillins - Ampicillin	4	11	1															7		3							
Cephalosporins - Cefotaxim	0.5	11	0							5		6															
Cephalosporins - Ceftazidim	2	11	0											7		4											
Sulphonamides - Sulfamethoxazol	256	11	1																								

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

S. Typhimurium	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol		1																2	64
Tetracyclines - Tetracycline		1																1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin				1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		5		3		1					1					8	1024

Table Antimicrobial susceptibility testing of *S. Anatum* in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Anatum	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	5	0																						5		
Amphenicols - Florfenicol	16	5	0																			4		1			
Tetracyclines - Tetracycline	8	5	2															1		2							
Fluoroquinolones - Ciprofloxacin	0.06	5	0			3		2																			
Quinolones - Nalidixic acid	16	5	0																			5					
Trimethoprim	2	5	2													3											
Aminoglycosides - Streptomycin	32	5	1																						1	1	
Aminoglycosides - Gentamicin	2	5	2											3												2	
Aminoglycosides - Kanamycin	8	5	0																			5					
Penicillins - Ampicillin	4	5	4															1									
Cephalosporins - Cefotaxim	0.5	5	0							2		3															
Cephalosporins - Ceftazidim	2	5	0											4		1											
Sulphonamides - Sulfamethoxazol	256	5	2																								

Table Antimicrobial susceptibility testing of *S. Anatum* in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Anatum  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																		
	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		2		1														2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		2		1									2					8	1024

Table Antimicrobial susceptibility testing of Other serovars in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

Other serovars	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	29	1																			7		21			
Amphenicols - Florfenicol	16	29	1																	2		9		17			
Tetracyclines - Tetracycline	8	29	12															1		15				1			
Fluoroquinolones - Ciprofloxacin	0.06	29	0			10		18		1																	
Quinolones - Nalidixic acid	16	29	0																			28		1			
Trimethoprim	2	29	6													23											
Aminoglycosides - Streptomycin	32	29	12																					12		4	
Aminoglycosides - Gentamicin	2	29	2											15		11		1								1	
Aminoglycosides - Kanamycin	8	29	1																			27		1			
Penicillins - Ampicillin	4	29	9													2		16		2							
Cephalosporins - Cefotaxim	0.5	29	0							14		13		2													
Cephalosporins - Ceftazidim	2	29	0											19		10											
Sulphonamides - Sulfamethoxazol	256	29	12																					1		2	



Table Antimicrobial susceptibility testing of Other serovars in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Other serovars	Pigs - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					1													2	64
Amphenicols - Florfenicol					1													2	64
Tetracyclines - Tetracycline				1	11													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			6															0.5	32
Aminoglycosides - Streptomycin		1		2		4	6											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			9															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				11		3							12					8	1024

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

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

S. Newport	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																			1		1			
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	1																	1							
Fluoroquinolones - Ciprofloxacin	0.06	2	1			1								1													
Quinolones - Nalidixic acid	16	2	1																			1					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																					1			
Aminoglycosides - Gentamicin	2	2	0											2													
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	1															1									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

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

S. Newport	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	121																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin		1																2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1														8	1024

Table Antimicrobial susceptibility testing of *S. Saintpaul* in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Saintpaul	Turkeys - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16
Amphenicols - Chloramphenicol	16	3	0																					2		1
Amphenicols - Florfenicol	16	3	0																			1		1		1
Tetracyclines - Tetracycline	8	3	2																			1				
Fluoroquinolones - Ciprofloxacin	0.06	3	1					2													1					
Quinolones - Nalidixic acid	16	3	1																			2				
Trimethoprim	2	3	0													2		1								
Aminoglycosides - Streptomycin	32	3	2																							
Aminoglycosides - Gentamicin	2	3	2											1												1
Aminoglycosides - Kanamycin	8	3	1																			2				
Penicillins - Ampicillin	4	3	2															1								
Cephalosporins - Cefotaxim	0.5	3	0									2		1												
Cephalosporins - Ceftazidim	2	3	0											1		1		1								
Sulphonamides - Sulfamethoxazol	256	3	3																							

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

S. Saintpaul  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Turkeys - at farm - Monitoring																			
	11																			
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	64	
Amphenicols - Florfenicol																		2	64	
Tetracyclines - Tetracycline					2													1	64	
Fluoroquinolones - Ciprofloxacin																		0.008	8	
Quinolones - Nalidixic acid					1													4	64	
Trimethoprim																		0.5	32	
Aminoglycosides - Streptomycin		1		1		1												2	128	
Aminoglycosides - Gentamicin		1																0.25	32	
Aminoglycosides - Kanamycin		1																4	128	
Penicillins - Ampicillin			2															0.5	32	
Cephalosporins - Cefotaxim																		0.06	4	
Cephalosporins - Ceftazidim																		0.25	16	
Sulphonamides - Sulfamethoxazol													3					8	1024	

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Senftenberg	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																						2		
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																						2		
Aminoglycosides - Gentamicin	2	2	0											1		1											
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0																		1		1				
Cephalosporins - Cefotaxim	0.5	2	0											1		1											
Cephalosporins - Ceftazidim	2	2	0													2											
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. Senftenberg* in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Senftenberg	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1														8	1024

Table Antimicrobial susceptibility testing of Other serovars in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

Other serovars	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	38	2																			5		28		3	
Amphenicols - Florfenicol	16	38	0																	1		20		14		3	
Tetracyclines - Tetracycline	8	38	3															5		28		2					
Fluoroquinolones - Ciprofloxacin	0.06	38	3			8		25		2		1		1		1											
Quinolones - Nalidixic acid	16	38	3																			33		2			
Trimethoprim	2	38	3													35											
Aminoglycosides - Streptomycin	32	38	4																					20		13	
Aminoglycosides - Gentamicin	2	38	0											20		18											
Aminoglycosides - Kanamycin	8	38	10																			28					
Penicillins - Ampicillin	4	38	13													2		21				2		1			
Cephalosporins - Cefotaxim	0.5	38	0							22		13		1		2											
Cephalosporins - Ceftazidim	2	38	0											27		10		1									
Sulphonamides - Sulfamethoxazol	256	38	6																								



Table Antimicrobial susceptibility testing of Other serovars in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

Other serovars	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		2																2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline				1	2													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		1			2													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		1		2			2											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin							10											4	128
Penicillins - Ampicillin			12															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		3		22		7							6					8	1024

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

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

S. Typhimurium	Turkeys - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	5	5																							
Amphenicols - Florfenicol	16	5	2																							3
Tetracyclines - Tetracycline	8	5	5																							
Fluoroquinolones - Ciprofloxacin	0.06	5	1			1		3						1												
Quinolones - Nalidixic acid	16	5	1																			4				
Trimethoprim	2	5	3													2										
Aminoglycosides - Streptomycin	32	5	5																							
Aminoglycosides - Gentamicin	2	5	0													4		1								
Aminoglycosides - Kanamycin	8	5	3																			2				
Penicillins - Ampicillin	4	5	5																							
Cephalosporins - Cefotaxim	0.5	5	0							3		2														
Cephalosporins - Ceftazidim	2	5	0											4		1										
Sulphonamides - Sulfamethoxazol	256	5	5																							

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

S. Typhimurium  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Turkeys - at farm - Monitoring																			
	11																			
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol					5													2	64	
Amphenicols - Florfenicol		1		1														2	64	
Tetracyclines - Tetracycline		1		1	3													1	64	
Fluoroquinolones - Ciprofloxacin																		0.008	8	
Quinolones - Nalidixic acid					1													4	64	
Trimethoprim			3															0.5	32	
Aminoglycosides - Streptomycin				1		1	3											2	128	
Aminoglycosides - Gentamicin																		0.25	32	
Aminoglycosides - Kanamycin							3											4	128	
Penicillins - Ampicillin			5															0.5	32	
Cephalosporins - Cefotaxim																		0.06	4	
Cephalosporins - Ceftazidim																		0.25	16	
Sulphonamides - Sulfamethoxazol													5					8	1024	

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

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

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	86	0																			21		65		
Amphenicols - Florfenicol	16	86	0																	2		79		5		
Tetracyclines - Tetracycline	8	86	0															15		70		1				
Fluoroquinolones - Ciprofloxacin	0.06	86	1			28		56		1				1												
Quinolones - Nalidixic acid	16	86	1																			85				
Trimethoprim	2	86	0													86										
Aminoglycosides - Streptomycin	32	86	0																	19		59		8		
Aminoglycosides - Gentamicin	2	86	0											64		18		3		1						
Aminoglycosides - Kanamycin	8	86	0																			85		1		
Penicillins - Ampicillin	4	86	0													1		79		6						
Cephalosporins - Cefotaxim	0.5	86	0							60		26														
Cephalosporins - Ceftazidim	2	86	0											84		2										
Sulphonamides - Sulfamethoxazol	256	86	0																							2

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

S. Enteritidis	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					1													4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		9		68		7												8	1024

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

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

S. Derby	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	44	3																						31	10
Amphenicols - Florfenicol	16	44	2																			3		36		3
Tetracyclines - Tetracycline	8	44	22															1		21						
Fluoroquinolones - Ciprofloxacin	0.06	44	0			23		20		1																
Quinolones - Nalidixic acid	16	44	0																			44				
Trimethoprim	2	44	3													41										
Aminoglycosides - Streptomycin	32	44	9																					11		21
Aminoglycosides - Gentamicin	2	44	1											32		10		1								
Aminoglycosides - Kanamycin	8	44	1																			43				
Penicillins - Ampicillin	4	44	6													1		32		5						
Cephalosporins - Cefotaxim	0.5	44	2							5		33		4										2		
Cephalosporins - Ceftazidim	2	44	2											2		37		3							2	
Sulphonamides - Sulfamethoxazol	256	44	14																							

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

S. Derby  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Pigs - unspecified - Clinical investigations																		
	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol					3													2	64
Amphenicols - Florfenicol		2																2	64
Tetracyclines - Tetracycline				1	21													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		3				1	8											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			6															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		11		17		2							14					8	1024

Table Antimicrobial susceptibility testing of *S. Anatum* in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. Anatum	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	1																								
Aminoglycosides - Streptomycin	32	1	0																							1	
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	1																								
Penicillins - Ampicillin	4	1	0																1								
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	1																								



Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

S. Anatum	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin						1												4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - Clinical investigations																										
	121																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	5	0																						5		
Amphenicols - Florfenicol	16	5	0																			3		2			
Tetracyclines - Tetracycline	8	5	5																								
Fluoroquinolones - Ciprofloxacin	0.06	5	1			2		2							1												
Quinolones - Nalidixic acid	16	5	1																			4					
Trimethoprim	2	5	0													5											
Aminoglycosides - Streptomycin	32	5	5																								
Aminoglycosides - Gentamicin	2	5	0											3		2											
Aminoglycosides - Kanamycin	8	5	0																			5					
Penicillins - Ampicillin	4	5	5																								
Cephalosporins - Cefotaxim	0.5	5	0							4		1															
Cephalosporins - Ceftazidim	2	5	0											5													
Sulphonamides - Sulfamethoxazol	256	5	5																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - unspecified - Clinical investigations																		
	121																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					5													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		1																4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin						2	3											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			5															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol												5						8	1024

Table Antimicrobial susceptibility testing of *S. Infantis* in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Infantis	Pigs - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	8	0																			1		7			
Amphenicols - Florfenicol	16	8	0																			5		3			
Tetracyclines - Tetracycline	8	8	0															2		6							
Fluoroquinolones - Ciprofloxacin	0.06	8	0			3		5																			
Quinolones - Nalidixic acid	16	8	0																			8					
Trimethoprim	2	8	1													7											
Aminoglycosides - Streptomycin	32	8	1																					5		2	
Aminoglycosides - Gentamicin	2	8	0											6		2											
Aminoglycosides - Kanamycin	8	8	0																			8					
Penicillins - Ampicillin	4	8	1													1		6									
Cephalosporins - Cefotaxim	0.5	8	0							1		7															
Cephalosporins - Ceftazidim	2	8	0											2		6											
Sulphonamides - Sulfamethoxazol	256	8	1																								

Table Antimicrobial susceptibility testing of *S. Infantis* in Pigs - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Infantis	Pigs - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	489																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim			1															0.5	32
Aminoglycosides - Streptomycin						1												2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		6									1					8	1024

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

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

S. Paratyphi B var. Java	Turkeys - unspecified - 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	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	1																						1		
Amphenicols - Florfenicol	16	2	0																						2		
Tetracyclines - Tetracycline	8	2	1															1									
Fluoroquinolones - Ciprofloxacin	0.06	2	2											2													
Quinolones - Nalidixic acid	16	2	2																								
Trimethoprim	2	2	2																								
Aminoglycosides - Streptomycin	32	2	1																								
Aminoglycosides - Gentamicin	2	2	1											1													
Aminoglycosides - Kanamycin	8	2	1																			1					
Penicillins - Ampicillin	4	2	1															1									
Cephalosporins - Cefotaxim	0.5	2	0									1		1													
Cephalosporins - Ceftazidim	2	2	0													2											
Sulphonamides - Sulfamethoxazol	256	2	1																						1		

Table Antimicrobial susceptibility testing of *S. Paratyphi B* var. Java in Turkeys - unspecified - Clinical investigations - quantitative data [ Dilution method ]

S. Paratyphi B var. Java	Turkeys - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol				1														2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline					1													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid					2													4	64
Trimethoprim			2															0.5	32
Aminoglycosides - Streptomycin		1					1											2	128
Aminoglycosides - Gentamicin		1																0.25	32
Aminoglycosides - Kanamycin							1											4	128
Penicillins - Ampicillin			1															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol													1					8	1024

S. Paratyphi B var. Java

Isolates out of a monitoring program (yes/no)

Number of isolates available in the laboratory

Turkeys - unspecified - Clinical investigations

121

## Antimicrobials:

Amphenicols - Chloramphenicol

Amphenicols - Florfenicol

Tetracyclines - Tetracycline

Fluoroquinolones - Ciprofloxacin

Quinolones - Nalidixic acid

Trimethoprim

Aminoglycosides - Streptomycin

Aminoglycosides - Gentamicin

Aminoglycosides - Kanamycin

Penicillins - Ampicillin

Cephalosporins - Cefotaxim

Cephalosporins - Cefazidim

Sulphonamides - Sulfamethoxazol

Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - unspecified - Clinical investigations																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	8	0																						8		
Amphenicols - Florfenicol	16	8	0																			7		1			
Tetracyclines - Tetracycline	8	8	0															6		2							
Fluoroquinolones - Ciprofloxacin	0.06	8	0			6		2																			
Quinolones - Nalidixic acid	16	8	0																			8					
Trimethoprim	2	8	0													8											
Aminoglycosides - Streptomycin	32	8	0																					2		6	
Aminoglycosides - Gentamicin	2	8	0											2		4		2									
Aminoglycosides - Kanamycin	8	8	0																			8					
Penicillins - Ampicillin	4	8	0															8									
Cephalosporins - Cefotaxim	0.5	8	0									7		1													
Cephalosporins - Ceftazidim	2	8	0											5		3											
Sulphonamides - Sulfamethoxazol	256	8	0																								



Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* (fowl) - unspecified - Clinical investigations - quantitative data [Dilution method ]

S. Senftenberg	Gallus gallus (fowl) - unspecified - Clinical investigations																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		5		3														8	1024

S. Senftenberg

Isolates out of a monitoring program (yes/no)

Number of isolates available in the laboratory

217

## Antimicrobials:

Amphenicols - Chloramphenicol

Amphenicols - Florfenicol

Tetracyclines - Tetracycline

Fluoroquinolones - Ciprofloxacin

Quinolones - Nalidixic acid

Trimethoprim

Aminoglycosides - Streptomycin

Aminoglycosides - Gentamicin

Aminoglycosides - Kanamycin

Penicillins - Ampicillin

Cephalosporins - Cefotaxim

Cephalosporins - Ceftazidim

Sulphonamides - Sulfamethoxazol

Table Antimicrobial susceptibility testing of *S. 1,4,[5],12:i:-* in *Gallus gallus* (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - Monitoring																										
	143																										
	Cut-off value	N	n	≤0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																			1					
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0			1																					
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																					1			
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

Table Antimicrobial susceptibility testing of S. 1,4,[5],12:i:- in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

S. 1,4,[5],12:i:-  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	143																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1																8	1024

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]

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

S. enterica subsp. enterica, rough	Turkeys - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	2	0																						2		
Amphenicols - Florfenicol	16	2	0																			2					
Tetracyclines - Tetracycline	8	2	0																	2							
Fluoroquinolones - Ciprofloxacin	0.06	2	0					2																			
Quinolones - Nalidixic acid	16	2	0																			2					
Trimethoprim	2	2	0													2											
Aminoglycosides - Streptomycin	32	2	0																			2					
Aminoglycosides - Gentamicin	2	2	0											1		1											
Aminoglycosides - Kanamycin	8	2	0																			2					
Penicillins - Ampicillin	4	2	0															2									
Cephalosporins - Cefotaxim	0.5	2	0							2																	
Cephalosporins - Ceftazidim	2	2	0											2													
Sulphonamides - Sulfamethoxazol	256	2	0																								

Table Antimicrobial susceptibility testing of *S. enterica* subsp. *enterica*, rough in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]

S. enterica subsp. enterica, rough  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Turkeys - at farm - Monitoring																		
	11																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		1		1														8	1024

## Table Antimicrobial susceptibility testing of *S. Typhimurium* in *Gallus gallus* (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																			1					
Tetracyclines - Tetracycline	8	1	1																								
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																					1			
Aminoglycosides - Gentamicin	2	1	0											1													
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0							1																	
Cephalosporins - Ceftazidim	2	1	0											1													
Sulphonamides - Sulfamethoxazol	256	1	0																								

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

S. Typhimurium	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline		1																1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

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

Other serovars	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	1	0																						1		
Amphenicols - Florfenicol	16	1	0																						1		
Tetracyclines - Tetracycline	8	1	0																	1							
Fluoroquinolones - Ciprofloxacin	0.06	1	0					1																			
Quinolones - Nalidixic acid	16	1	0																			1					
Trimethoprim	2	1	0													1											
Aminoglycosides - Streptomycin	32	1	0																							1	
Aminoglycosides - Gentamicin	2	1	0															1									
Aminoglycosides - Kanamycin	8	1	0																			1					
Penicillins - Ampicillin	4	1	0															1									
Cephalosporins - Cefotaxim	0.5	1	0									1															
Cephalosporins - Ceftazidim	2	1	0															1									
Sulphonamides - Sulfamethoxazol	256	1	0																								



Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

Other serovars	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol																		2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline																		1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid																		4	64
Trimethoprim																		0.5	32
Aminoglycosides - Streptomycin																		2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin																		4	128
Penicillins - Ampicillin																		0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol				1														8	1024

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

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

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

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

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

Test Method Used

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
Broth dilution	NCCLS/CLSI

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

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

## 2.2 CAMPYLOBACTERIOSIS

### 2.2.1 General evaluation of the national situation

### 2.2.2 Campylobacter in foodstuffs

#### A. Thermophilic Campylobacter in Broiler meat and products thereof

##### Monitoring system

##### Sampling strategy

##### At retail

Prevalence data were derived from surveillance. Surveillance data were derived from the routine surveillance carried out as planned samples by the competent authorities of the Federal Laender according to Reg. (EC) 882/2004 (see general chapter).

##### Results of the investigation

##### Surveillance

Fresh broiler meat was positive for Campylobacter spp. in 28.5 % of samples at retail in (2009: 28.6 %).

Meat preparations were positive in 23.8 % of samples tested (2009: 27.5 %).

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

The proportion of positive fresh broiler meat samples was slightly lower as in the previous year in the context of the routine surveillance in 2010.

However, a substantial part of fresh meat samples from broilers is contaminated with Campylobacter spp. and therefore can be source of Campylobacter infections in humans.

## B. Thermophilic Campylobacter spp., unspecified in Food Meat from turkey - at retail - Monitoring - official sampling - objective sampling

### Monitoring system

#### Sampling strategy

Monitoring data were collected in the framework of a national sampling plan. The total target sample size of 384 was assigned to the Federal Laender according to their population. Additional sampling was carried out at the abattoir. Samples were assigned to the Länder according to their slaughter capacity. Independent samples were collected at random. A sample was considered positive if any type of Campylobacter spp. was detected in the 25 g sample using the bacteriological method:ISO 10272-1:2006

### Results of the investigation

Surveillance: Campylobacter spp. were detected at retail in 17.6 % of the fresh turkey meat samples and in 8.6 % of meat preparations in 2010.

In the framework of the monitoring 17.3 % of the 649 fresh meat samples collected at retail were positive for Campylobacter. At slaughterhouse, 68 % of the carcasses were positive for Campylobacter.

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

This result is in line with surveillance data collected between 2005 and 2010 (between 8.7 and 18.0 % positive samples) and with the results of the monitoring programme in 2009 (19.6 %). Results indicate that turkey meat may be a source of human Campylobacter infection.



C. Thermophilic Campylobacter spp., unspecified in Food Meat from pig - at retail - Monitoring  
- official sampling - objective sampling

Results of the investigation

Surveillance: Overall, Campylobacter spp. were rarely identified in pig meat at retail. One sample per category was positive, which meant 1.7 % in fresh pig meat (3 positives of 174 samples), 0 % in minced meat and 0 % in meat preparations.

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

Pig meat rarely contains Campylobacter spp.. This result is in line with surveillance data from 2005 to 2009 and with data from monitoring in 2009.

## D. Thermophilic Campylobacter spp., unspecified in Food Milk, cows' - raw - at farm - Monitoring - official sampling - objective sampling

### Monitoring system

#### Sampling strategy

##### Monitoring:

Bulk tank milk samples were collected at farm. The total target sample size of 384 was assigned to the Federal Laender according to the number of dairy cows in the respective land. Samples were collected all year round. Only farms with more than 20 lactating dairy cattle were included.

In 2010, an additional separate sampling frame was designed for farms producing certified milk intended to be consumed raw. Only 30 samples were collected in this frame.

Samples were analysed with the bacteriological method ISO 10272-1:2006. A sample was considered positive if any type of Campylobacter spp. was detected in 25 ml of milk.

### Results of the investigation

Surveillance: Two of 116 samples at retail (1.7 %) were positive for Campylobacter spp. (only in raw milk for manufacture of heat treated milk and products).

Monitoring: Among the 314 bulk tank milk samples, 6 were positive for Campylobacter (1.9 %).

Among the 30 samples collected from certified farms producing milk intended to be consumed raw, no sample was positive for Campylobacter.

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

Campylobacter may be present in raw milk. This confirms that milk should be heat treated before being sold for consumption. The sample size for the sampling in certified farms was not large enough to conclude, that milk from such farms does not contain Campylobacter.

The sample size in monitoring was not fully achieved. This needs to be taken into account when assessing the data and comparing them over the years.

E. Campylobacter spp. in food

## Monitoring system

## Sampling strategy

In 2010 food samples were collected for Campylobacter testing in two distinct frameworks

## A. Surveillance

For 2010, results of Campylobacter detection in the most important foods obtained in examinations of samples collected under the sampling plan within the official food control according to Reg. (EC) No. 882/2004 were reported from most of the Federal Laender.

## B: Monitoring

Samples from meat of turkeys were collected at retail in the framework of a specified national sampling plan. Results of the monitoring investigations are described in the respective food chapters.

## Results of the investigation

## Surveillance:

As in the previous year, Campylobacter detection at retail in plan samples in 2010 was mainly possible in poultry meat with 23.9 % positive samples (2009: 26.0 %). Campylobacter was also isolated from meat of ducks in 32.7 % of 110 samples (2009: 67 %, 73 samples). Meat products containing poultry meat (cooked, ready-to-eat) exhibited a Campylobacter rate of 9.3 % (2009: 4 %). From Campylobacter positive foods, mainly C. jejuni and C. coli were isolated. From poultry meat, C. jejuni was isolated in three quarters of the positive samples. In pork, Campylobacter was detected in 1.7 % of samples (2009: 0.8 %) and there was only C. coli isolated.

The following amendments were made:

Date of Modification	Row name	Old value	New value
2011-10-12	Results of the investigation	<p>Surveillance:</p> <p>As in the previous year, Campylobacter detection at retail in plan samples in 2010 was mainly possible in poultry meat with 23.9 % positive samples (2009: 26.0 %). Campylobacter was also isolated from meat of ducks in 32.7 % of 110 samples (2009: 67 %, 73 samples). Meat products containing poultry meat (cooked, ready-to-eat) exhibited a Campylobacter rate of 9.3 % (2009: 4 %). From Campylobacter positive foods, mainly C. jejuni and C. coli were isolated. From poultry meat, C. jejuni was isolated in three quarters of the positive samples. In pork, Campylobacter was detected in 0.8 % of samples (2008: 0.5 %) and there was only C. coli isolated.</p> <p>Monitoring:</p> <p>Results are described in the respective chapter.</p>	<p>Surveillance:</p> <p>As in the previous year, Campylobacter detection at retail in plan samples in 2010 was mainly possible in poultry meat with 23.9 % positive samples (2009: 26.0 %). Campylobacter was also isolated from meat of ducks in 32.7 % of 110 samples (2009: 67 %, 73 samples). Meat products containing poultry meat (cooked, ready-to-eat) exhibited a Campylobacter rate of 9.3 % (2009: 4 %). From Campylobacter positive foods, mainly C. jejuni and C. coli were isolated. From poultry meat, C. jejuni was isolated in three quarters of the positive samples. In pork, Campylobacter was detected in 1.7 % of samples (2009: 0.8 %) and there was only C. coli isolated.</p>

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 processing plant	official food surveillance	Single	25g	35	0					
Meat from bovine animals - fresh - at retail	official food surveillance	Single	25g	53	1		1			
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	2	0					
Meat from bovine animals - minced meat - intended to be eaten raw - at retail	official food surveillance	Single	25g	7	0					
Meat from pig - fresh - at processing plant	official food surveillance	Single	25g	114	1		1			
Meat from pig - fresh - at retail	official food surveillance	Single	25g	174	3	3				
Meat from pig - minced meat - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	4	0					
Meat from pig - minced meat - intended to be eaten raw - at retail	official food surveillance	Single	25g	21	0					
Meat from sheep - fresh - at processing plant	official food surveillance	Single	25g	2	0					
Meat from sheep - fresh - at retail	official food surveillance	Single	25g	3	0					
Milk, cows' - raw	<sup>1)</sup> official food surveillance	Single	25g	5	1		1			
Milk, cows' - raw - intended for direct human consumption	<sup>2)</sup> official food surveillance	Single	25g	121	0					
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	<sup>3)</sup> vv	---	25g	0	0	0	0	0	0	0
Fishery products, unspecified	official food surveillance	Single	25g	79	6		1	5		

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
Milk, cows' - at farm - Monitoring - official sampling - objective sampling (Certified milk intended to be consumed raw)	monitoring	Single	25g	30	0					
Milk, cows' - raw - at farm - Monitoring (Bulk tank milk samples, intended to be heat treated)	monitoring	Single	25g	314	6					6
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products <sup>4)</sup>	official food surveillance	Single	25g	438	9	1	8			

## Comments:

- 1) at farm (sold at farm with recommendation for heating of 10 min.)
- 2) certified milk
- 3) vv
- 4) all milk

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Thermophilic Campylobacter spp., unspecified		0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	C. upsaliensis		0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	C. lari		0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Comment	all milk	vv
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	C. coli	1	0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Sampling unit	Single	---
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	C. jejuni	8	0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Units tested	438	0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Total units positive for Campylobacter	9	0
	Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	Source of information	official food surveillance	vv
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Total units positive for Campylobacter		9
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	C. coli		1	

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Sample weight		25g
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Sampling unit		Single
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	C. jejuni		8
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Units tested		438
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Source of information		official food surveillance
	Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	Comment		all milk

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 processing plant <sup>1)</sup>	official food surveillance	Single	25g	107	51	12	41			
Meat from broilers (Gallus gallus) - fresh - at retail	official food surveillance	Single	25g	681	194	53	109	2		30
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	11	3	2	1			
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail <sup>2)</sup>	official food surveillance	Single	25g	122	29	8	23			
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	3	0					
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	126	8	3	5			
Meat from turkey - fresh - at slaughterhouse <sup>3)</sup>	monitoring	Single	25g	359	244					244
Meat from turkey - fresh - at retail	monitoring	Single	25g	649	124					124
Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant	official food surveillance	Single	25g	17	4	2	1			1
Meat from turkey - meat preparation - intended to be eaten cooked - at retail	official food surveillance	Single	25g	93	8		7			1
Meat from turkey - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g	1	0					
Meat from turkey - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g	36	1		1			



Table Campylobacter in poultry meat

Comments:

- 1) 2 double isolations
- 2) 2 double isolations
- 3) Skin samples from carcasses

## 2.2.3 Campylobacter in animals

### A. Campylobacter spp. in animal

#### Monitoring system

##### Sampling strategy

Animals were tested for Campylobacter in two different frameworks.

##### A. Surveillance

The data of herds or flocks are based on thermophilic Campylobacter species. Samples have been sent to the laboratory for diagnostic examination.

##### B: Monitoring

Turkeys were tested at the slaughterhouse. 384 samples were assigned to the Länder according to their slaughter capacity

#### Methods of sampling (description of sampling techniques)

Monitoring of turkeys at slaughter:

Pooled samples of 10 caeca per slaughter batch were examined.

#### Diagnostic/analytical methods used

Monitoring of turkeys at slaughter:

ISO 10272-1:2006

#### Results of the investigation

##### Surveillance

In cattle, Campylobacter was isolated from 11 % of the investigated herds (2009: 18 %). *C. jejuni* was isolated more often than *C. coli* (39 % vs. 32 % of the isolates).

In swine, 34.5 % of the examined herds were positive for Campylobacter, less than in 2009 (43.9 %). 30 of the 39 isolates were *C. coli*.

In turkeys, 66 % of the investigated herds were positive for Campylobacter with some more *C. coli* as *C. jejuni*.

##### Monitoring

33.3 % of the pooled caecum samples were positive for Campylobacter at the slaughterhouse.

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

##### Monitoring

Results indicate that there is a substantial introduction of Campylobacter from turkeys into the slaughterhouse. Investigations in carcasses show, that these Campylobacter are readily transmitted to the carcasses during the slaughter process.

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
Cats	official reports of the laender	Animal	600	14	1	4			9
Cattle (bovine animals) - calves (under 1 year)	official reports of the laender	Herd	133	11	2	4			5
Cattle (bovine animals) - dairy cows	official reports of the laender	Herd	58	1	1				
Dogs	official reports of the laender	Animal	1129	57	4	9		13	31
Goats	official reports of the laender	Herd	23	1					1
Pigs	official reports of the laender	Herd	113	39	30				9
Sheep	official reports of the laender	Herd	93	2					2
Solipeds, domestic	official reports of the laender	Herd	712	1		1			
Turkeys	<sup>1)</sup> official reports of the laender	Herd	234	155	81	77			
Cattle (bovine animals) - mixed herds (all cattle herds)	official reports of the laender	Herd	380	41	2	4			35
Gallus gallus (fowl) - unspecified	official reports of the laender	Animal	340	58	27	22			9
Turkeys - Monitoring - official sampling - objective sampling	<sup>2)</sup> monitoring	Slaughter batch	363	121					121

## Comments:

<sup>1)</sup> 3 double isolations

<sup>2)</sup> Caecum content

## Table Campylobacter in animals

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Cattle (bovine animals) - mixed herds - all cattle herds	Source of information		official reports of the laender
	Cattle (bovine animals) - mixed herds - all cattle herds	C. coli		2
	Cattle (bovine animals) - mixed herds - all cattle herds	C. jejuni		4
	Cattle (bovine animals) - mixed herds - all cattle herds	Units tested		380
	Cattle (bovine animals) - mixed herds - all cattle herds	Sampling unit		Herd
	Cattle (bovine animals) - mixed herds - all cattle herds	Thermophilic Campylobacter spp., unspecified		35
	Cattle (bovine animals) - mixed herds - all cattle herds	Total units positive for Campylobacter		41

## 2.2.4 Antimicrobial resistance in Campylobacter isolates

### A. Antimicrobial resistance in Campylobacter jejuni and coli in cattle

#### Sampling strategy used in monitoring

##### Methods of sampling (description of sampling techniques)

Campylobacter isolates were collected from the bulk tank milk of dairy herds (see chapter Campylobacter in raw milk).

#### Results of the investigation

Two of the three isolates were fully susceptible to all antimicrobials tested. One isolate was resistant to tetracycline. All three isolates were *C. jejuni*.

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

The number of isolates is too small for a valid evaluation.

## B. Antimicrobial resistance in *Campylobacter jejuni* and *coli* in foodstuff derived from poultry

### Sampling strategy used in monitoring

#### Procedures for the selection of isolates for antimicrobial testing

*Campylobacter* isolates from turkey carcasses at slaughter and turkey meat at retail were collected in the framework of a national monitoring programme (see respective chapter). All isolates submitted to the National Reference Laboratory for *Campylobacter* in this framework were tested for their antimicrobial resistance

### Results of the investigation

*Campylobacter jejuni* from turkey carcasses tended to be more resistant than those from meat at retail. Resistance to fluoroquinolones and tetracycline was frequent in isolates of both species from both origins. Additionally, *C. coli* isolates were frequently resistant to erythromycin, which is in line with results on isolates from caecum content of turkeys at slaughter.

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

Similarity of resistance patterns of isolates collected at different points of the turkey meat food chain indicate vertical spread along the food chain.

## C. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

### Sampling strategy used in monitoring

#### Procedures for the selection of isolates for antimicrobial testing

Campylobacter isolates were collected in the framework of a national monitoring programme on Campylobacter in caecum content of turkeys at slaughter (see respective chapter)

### Results of the investigation

The majority of Campylobacter isolates from turkeys at slaughter were resistant to at least one of the tested antimicrobials. *C. coli* was more often resistant (97.4 %) than *C. jejuni* (79 %). Resistance rates were highest for tetracycline, ciprofloxacin and nalidixic acid in both species. In contrast to *C. jejuni*, *C. coli* was frequently resistant to erythromycin (64.5 %).

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

Campylobacter from turkeys show a high level of resistance. This in line with high resistance rates in Campylobacter isolates from turkey meat.

## Table Antimicrobial susceptibility testing of *C. jejuni* in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

<i>C. jejuni</i>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	62	0																	52		8		2			
Tetracyclines - Tetracycline	2	62	39											22		1						2				1	
Fluoroquinolones - Ciprofloxacin	1	62	42							2		9		7				2				1	41				
Quinolones - Nalidixic acid	16	62	38																	6		13		2		3	
Aminoglycosides - Streptomycin	2	62	4															48		10		3					
Aminoglycosides - Gentamicin	1	62	0									8		33		19		2									
Macrolides - Erythromycin	4	62	2													42		11		7							

<i>C. jejuni</i>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	$> 16$	32	$> 32$	64	$> 64$	128	$> 128$	256	$> 256$	512	$> 512$	1024	$> 1024$	2048	$> 2048$	4096	$> 4096$	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	36																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		11		20	7													2	64	
Aminoglycosides - Streptomycin	1																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	



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

<b>C. jejuni</b>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
	62																		
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Macrolides - Erythromycin			2															0.5	32

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

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

<i>C. coli</i>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	76	0																	31		41		3		1	
Tetracyclines - Tetracycline	2	76	70											6													
Fluoroquinolones - Ciprofloxacin	1	76	71									3		1		1							71				
Quinolones - Nalidixic acid	32	76	62																			3		2		1	
Aminoglycosides - Streptomycin	4	76	10															18		39		9		2		1	
Aminoglycosides - Gentamicin	2	76	0									1		6		55		12		2							
Macrolides - Erythromycin	16	76	49													9		12		6							

<i>C. coli</i>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	$> 16$	32	$> 32$	64	$> 64$	128	$> 128$	256	$> 256$	512	$> 512$	1024	$> 1024$	2048	$> 2048$	4096	$> 4096$	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	70																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		8		45	17													2	64	
Aminoglycosides - Streptomycin	7																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	

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

<b>C. coli</b>	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
Isolates out of a monitoring program (yes/no)																			
Number of isolates available in the laboratory	76																		
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Macrolides - Erythromycin			49															0.5	32

## Table Antimicrobial susceptibility testing of *C. jejuni* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

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

<i>C. jejuni</i>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	143	0																	105		30		5		3	
Tetracyclines - Tetracycline	2	143	83											55		3		2								6	
Fluoroquinolones - Ciprofloxacin	1	143	94							3		22		22		2				1		6	87				
Quinolones - Nalidixic acid	16	143	80																	14		33		10		6	
Aminoglycosides - Streptomycin	2	143	17															99		27		6		2			
Aminoglycosides - Gentamicin	1	143	0									27		56		55		5									
Macrolides - Erythromycin	4	143	8													72		40		22		1					

<i>C. jejuni</i>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	77																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		25		35	20													2	64	
Aminoglycosides - Streptomycin	9																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	

**Table Antimicrobial susceptibility testing of *C. jejuni* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

<b>C. jejuni</b>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																		
	Isolates out of a monitoring program (yes/no)																		
	Number of isolates available in the laboratory																		
	143																		
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Macrolides - Erythromycin			8															0.5	32

Table Antimicrobial susceptibility testing of *C. coli* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

<i>C. coli</i>	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16	
Amphenicols - Chloramphenicol	16	31	0																	21		8		2			
Tetracyclines - Tetracycline	2	31	24											7													
Fluoroquinolones - Ciprofloxacin	1	31	28									1		2								1	27				
Quinolones - Nalidixic acid	32	31	21																			1		2		1	
Aminoglycosides - Streptomycin	4	31	9															13		8		1					
Aminoglycosides - Gentamicin	2	31	0									1		7		21		2									
Macrolides - Erythromycin	16	31	7													9		10		3		2					

<i>C. coli</i>	Meat from turkey - fresh - at retail - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	$> 16$	32	$> 32$	64	$> 64$	128	$> 128$	256	$> 256$	512	$> 512$	1024	$> 1024$	2048	$> 2048$	4096	$> 4096$	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	24																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		6		14	7													2	64	
Aminoglycosides - Streptomycin	9																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	

Table Antimicrobial susceptibility testing of C. coli in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

C. coli	Meat from turkey - fresh - at retail - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Macrolides - Erythromycin			7															0.5	32	

## Table Antimicrobial susceptibility testing of *C. coli* in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]

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

<i>C. coli</i>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																											
	Isolates out of a monitoring program (yes/no)																											
	Number of isolates available in the laboratory																											
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16		
Amphenicols - Chloramphenicol	16	89	0																	42		45		2				
Tetracyclines - Tetracycline	2	89	80											9										1		2		
Fluoroquinolones - Ciprofloxacin	1	89	75							2		3		4		4		1				1	74					
Quinolones - Nalidixic acid	32	89	64																			4		12		1		
Aminoglycosides - Streptomycin	4	89	25															24		33		7		4				
Aminoglycosides - Gentamicin	2	89	0									2		12		54		20		1								
Macrolides - Erythromycin	16	89	34													14		17		18		5		1				

<i>C. coli</i>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	77																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		8		37	27													2	64	
Aminoglycosides - Streptomycin	21																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	



**Table Antimicrobial susceptibility testing of C. coli in Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring - quantitative data [ Dilution method ]**

<b>C. coli</b>	Meat from turkey - carcass - chilled - at slaughterhouse - animal sample - neck skin - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
	89																			
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Macrolides - Erythromycin		1	33															0.5	32	

Table Antimicrobial susceptibility testing of *C. jejuni* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

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

C. jejuni	Meat from turkey - fresh - at retail - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	56	0																	45		9		2			
Tetracyclines - Tetracycline	2	56	25											27		4										2	
Fluoroquinolones - Ciprofloxacin	1	56	33							3		10		7		3							33				
Quinolones - Nalidixic acid	16	56	32																	4		17		1		2	
Aminoglycosides - Streptomycin	2	56	5															38		13		1		1			
Aminoglycosides - Gentamicin	1	56	0									9		24		21		2									
Macrolides - Erythromycin	4	56	1													36		10		9							

C. jejuni	Meat from turkey - fresh - at retail - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline	23																	0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid		4		21	7													2	64	
Aminoglycosides - Streptomycin	3																	1	16	
Aminoglycosides - Gentamicin																		0.12	16	

Table Antimicrobial susceptibility testing of *C. jejuni* in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

<b>C. jejuni</b>  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Meat from turkey - fresh - at retail - Monitoring																		
	56																		
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Macrolides - Erythromycin			1															0.5	32

Table Antimicrobial susceptibility testing of *C. jejuni* in Milk, cows' - raw milk for manufacture - at farm - Monitoring - quantitative data [ Dilution method ]

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

C. jejuni	Milk, cows' - raw milk for manufacture - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	3	0																	2		1				
Tetracyclines - Tetracycline	2	3	1											2												1
Fluoroquinolones - Ciprofloxacin	1	3	0									2		1												
Quinolones - Nalidixic acid	16	3	0																			2		1		
Aminoglycosides - Streptomycin	2	3	0															3								
Aminoglycosides - Gentamicin	1	3	0											2		1										
Macrolides - Erythromycin	4	3	0													1		1		1						

C. jejuni	Milk, cows' - raw milk for manufacture - at farm - Monitoring																			
	Isolates out of a monitoring program (yes/no)																			
	Number of isolates available in the laboratory																			
Antimicrobials:	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest	
Amphenicols - Chloramphenicol																		2	32	
Tetracyclines - Tetracycline																		0.25	16	
Fluoroquinolones - Ciprofloxacin																		0.06	4	
Quinolones - Nalidixic acid																		2	64	
Aminoglycosides - Streptomycin																		1	16	
Aminoglycosides - Gentamicin																		0.12	16	

Table Antimicrobial susceptibility testing of C. jejuni in Milk, cows' - raw milk for manufacture - at farm - Monitoring - quantitative data [ Dilution method ]

<b>C. jejuni</b>	Milk, cows' - raw milk for manufacture - at farm - Monitoring																		
Isolates out of a monitoring program (yes/no)																			
Number of isolates available in the laboratory	3																		
<b>Antimicrobials:</b>	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Macrolides - Erythromycin																		0.5	32

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

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 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

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

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

Test Method Used

Standard methods used for testing

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

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

Test Method Used	Standard methods used for testing

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

## 2.3 LISTERIOSIS

### 2.3.1 General evaluation of the national situation

### 2.3.2 Listeria in foodstuffs

#### A. L. monocytogenes in food

##### Monitoring system

###### Sampling strategy

Food was examined for *Listeria monocytogenes* in the framework of food control according to Reg. (EC) No 882/2004.

A specific monitoring was carried out in 2010 on the prevalence of *Listeria monocytogenes* in bulk tank milk on dairy farms. 384 farms were to be sampled. Samples were assigned to the Länder according to their dairy cow population. A specific sampling frame was designed for milk at farm that was intended to be consumed raw (certified milk). All farms producing such milk were supposed to be sampled.

##### Results of the investigation

###### Monitoring

15 of the 326 bulk tank milk samples were positive for *L. monocytogenes*. None of the 30 "certified milk" samples were positive.

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

In 2010, *Listeria monocytogenes* was detected in numerous categories of food collected under a sampling plan within the official food surveillance at retail. Compared with the previous year, red meat showed a slight increase in the share of positive samples (6.0 %, 2009: 4.3 %). *L. monocytogenes* was reported for meat of cattle and pork.

Comminuted raw meat, intended to be eaten raw, showed a rate of *L. monocytogenes* at 18.0 % (2009: 19.5 %). Stabilized meat products of pork at retail showed a slightly increase of *L. monocytogenes* contamination to 13.5 % of samples (2009: 13.2 %). In heat treated meat products of pork at retail ('cooked, ready-to-eat'), the share of 3.3 % of positive samples appears to be an increase compared to the previous years (2009: 2.5 %). According to these data, the frequency of detection of *L. monocytogenes* in stabilized meat products was higher than in heat treated meat products.

Detection rates in fish, seafood and products made from these showed a slight decrease to 6.4 % (2009: 6.7 %). Stabilised fish products showed increased detection rates with 4.7 % (2009: 3.25 %). *L. monocytogenes* was detected in heat treated (smoked) fish products at 4.0 % (2009: 2.8 %). In hard cheese made from pasteurised milk *L. monocytogenes*-findings were reported in 0.7 % of samples tested (2009: 0.4 %). In soft cheese made from pasteurized milk *Listeria* could be isolated in 0.5 % of the samples (2009: 2.2 %)

According to the regulations (EC) No. 1441/2007 and 2073/2005 quantitative investigations for *Listeria monocytogenes* are obligatory for the most food categories. Quantitative examinations for *L. monocytogenes* have been performed since the early 1990ies in Germany. Quantitative examinations have been stated as the positive share of the samples examined by the federal states under the sampling plan at retail within the official food surveillance. In 2010, bacterial counts exceeding  $10^2$  cfu/ g were

mainly detected in meat products, fish and products and milk products.

#### Monitoring

The sampling plan was not fully achieved. This has to be considered when evaluating the results and comparing them to results from other years. The number of samples from farms producing certified milk for raw consumption was too low for general conclusions. It is not valid to conclude that *L. monocytogenes* is not present on such farms.

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

It appears that in meat and meat products, contamination with *L. monocytogenes* takes place after the slaughtering process and during subsequent storage and/ or onward treatment. *L. monocytogenes* has continued to be widespread thus representing a risk to the consumers, in particular immunocompromised persons and pregnant women. It has been recommended for a long time already that these groups of persons should not consume raw meat products.

Bulk tank milk may contain *L. monocytogenes*. This underlined that milk should be heat treated before consumption.

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 cows' milk - hard - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			639	3	252	0	0
Cheeses made from cows' milk - hard - made from pasteurised milk - at retail	official food surveillance	Single	25g			2444	17	1106	5	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g			42	3	29	1	0
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			326	0	110	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			79	0	41	0	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g			797	4	645	18	4
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g			27	0	18	0	0
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			152	1	141	0	0
Cheeses made from goats' milk - hard - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			59	0	45	0	0
Cheeses made from goats' milk - hard - made from pasteurised milk - at retail	official food surveillance	Single	25g			98	3	63	0	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
Cheeses made from goats' milk - hard - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	5g			33	0	15	0	0
Cheeses made from goats' milk - hard - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			8	0	1	0	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			6	0	3	0	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g			26	0	16	0	0
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g			23	1	6	0	0
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			6	0	5	0	0
Cheeses made from sheep's milk - hard - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			34	0	17	0	0
Cheeses made from sheep's milk - hard - made from pasteurised milk - at retail	official food surveillance	Single	25g			64	0	33	0	0
Cheeses made from sheep's milk - hard - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g			9	0	8	0	0
Cheeses made from sheep's milk - hard - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			15	0	12	0	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
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at processing plant	official food surveillance	Single	25g			8	0	2	0	0
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - at retail	official food surveillance	Single	25g			16	0	11	0	0
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant	official food surveillance	Single	25g			6	0	1	0	0
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - at retail	official food surveillance	Single	25g			4	0	2	0	0
Dairy products (excluding cheeses) - butter - at processing plant	official food surveillance	Single	25g			117	0	16	0	0
Dairy products (excluding cheeses) - butter - at retail	official food surveillance	Single	25g			287	1	115	0	0
Milk, cows'	<sup>1)</sup> official food surveillance	Single	25g			10	0	9	0	0
Milk, cows' - pasteurised milk - at processing plant	official food surveillance	Single	25g			308	0	4	0	0
Milk, cows' - pasteurised milk - at retail	official food surveillance	Single	25g			764	0	229	0	0
Milk, cows' - raw - intended for direct human consumption	<sup>2)</sup> monitoring	Single	25g	30	0	30				
Milk, cows' - raw - at farm - Monitoring - official sampling - objective sampling (Bulk tank milk samples intended to be sold to dairy plant.)	monitoring	Single	25	326	15	326	15			



Table Listeria monocytogenes in milk and dairy products

Comments:

<sup>1)</sup> at farm (sold at farm with recommendation for heating of 10 min.)

<sup>2)</sup> at farm

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
Crustaceans - unspecified - cooked - at processing plant	official food surveillance	Single	25g			32	1	29	0	0
Crustaceans - unspecified - cooked - at retail	official food surveillance	Single	25g			352	7	322	0	0
Fish - smoked - at processing plant	official food surveillance	Single	25g			203	5	172	2	2
Fish - smoked - at retail	official food surveillance	Single	25g			784	31	635	3	12
Foodstuffs intended for special nutritional uses	official food surveillance	Single	25g			4	0	2	0	0
Infant formula	official food surveillance	Single	25g			69	0	2	0	0
Meat from bovine animals - fresh	official food surveillance	Single	25g			228	11	298	15	0
Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant	<sup>1)</sup> official food surveillance	Single	25g			10	0	8	0	0
Meat from bovine animals - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g			23	0	22	0	0
Meat from broilers ( <i>Gallus gallus</i> ) - fresh	<sup>2)</sup> official food surveillance	Single	25g			156	9	291	3	5
Meat from broilers ( <i>Gallus gallus</i> ) - meat products - cooked, ready-to-eat - at processing plant	<sup>3)</sup> official food surveillance	Single	25g			56	0	25	0	0
Meat from broilers ( <i>Gallus gallus</i> ) - meat products - cooked, ready-to-eat - at retail	<sup>4)</sup> official food surveillance	Single	25g			270	11	194	3	2
Meat from pig - fresh	official food surveillance	Single	25g			635	69	718	25	4
Meat from pig - meat products - cooked, ready-to-eat - at processing plant	official food surveillance	Single	25g			86	3	64	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
Meat from pig - meat products - cooked, ready-to-eat - at retail	official food surveillance	Single	25g			903	30	727	10	1

## Comments:

- 1) bovine meat products
- 2) all poultry meat
- 3) poultry, incl. other treatments
- 4) poultry, incl. other treatments

### 2.3.3 Listeria in animals

#### A. L. monocytogenes in animal

##### Monitoring system

###### Sampling strategy

There is no monitoring system in place. Samples from animals are taken in the course of diagnostic investigations.

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

In cattle 2.6 % of the animals were found positive (2009: 10.5 %). The proportion of positive samples remained low in swine (0.02%). In goats and sheep the proportion of samples positive for L. monocytogenes decreased to 4.7 % and 8.2 % vs. 7.2 % and 11.9 % in 2009, respectively.

Results are likely to overestimate the true prevalence as diagnostic investigations are mostly carried out in cases of suspicion.

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	official reports of the laender	Herd	588	48	48	
Cattle (bovine animals) - dairy cows	official reports of the laender	Herd	59	4	4	
Gallus gallus (fowl)	official reports of the laender	Animal	1329	6	6	
Goats	official reports of the laender	Herd	111	15	15	
Pigs	official reports of the laender	Herd	309	0		
Sheep	official reports of the laender	Herd	280	32	32	

## 2.4 E. COLI INFECTIONS

### 2.4.1 General evaluation of the national situation

### 2.4.2 Escherichia coli, pathogenic in foodstuffs

#### A. Verotoxigenic E. coli (VTEC) in food

##### Monitoring system

###### Sampling strategy

###### Surveillance

The federal states were requested to report results on VTEC examinations, where toxin production had been examined by means of SLT-PCR, ELISA or cyto-toxin testing. The results obtained for samples tested under a sampling plan are shown. In 2010 as in the previous years, VTEC testing was mainly performed by means of the BgVV-Dessau method.

###### Monitoring

A national sampling plan to estimate the prevalence in meat in raw bulk tank milk was designed. The samples from bulk tank milk samples were assigned to the Federal Laender according to the number of dairy cows in the respective Land. An additional sampling frame was designed for dairy farms producing certified milk to be consumed raw. However, in that case, the Länder were asked to sample all herds. This plan could not be fully achieved. This needs to be taken into account when data are assessed and compared over the years.

##### Results of the investigation

###### Surveillance

In 2010, mainly red meat, minced meat and stabilised meat products have been tested. At retail, VTEC/STEC was detected in red meat (4.8 % of samples), compared to 4.4 % in 2009. In beef some findings could be made with 1.0 % of samples (2009: 3.3 %). The highest VTEC/STEC rates were found in meat of game with 7.4 % of samples that tested positive. However, this figure was lower than in the previous year (2009: 12.0 %). VTEC was detected in 3.0 % of samples of minced meat, intended to be eaten raw (2009: 4.4 %). VTEC/STEC was 2010 not detected in stabilized meat products (2009: 1.6 %). VTEC/STEC was furthermore detected in one sample of soft cheese made from raw milk (1.8 %) and in one sample with O:91.

###### Monitoring

In 2010, VTEC were isolated from 4 of 296 bulk tank milk samples (1.4 %), and in none of the 30 samples from farms producing certified milk that is intended to be consumed raw.

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

The data from the official surveillance show a decrease of the detection rates compared to the previous year, mostly in meat products and meat preparations.

The results of the monitoring are in line with last years results. Raw milk is also a potential source of VTEC underlining the need to heat treat milk before selling it for consumption. The negative result in the

samples of certified milk should not be overestimated as the number of samples was low. It cannot be concluded from the data that VTEC do not occur in this product.

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	Verotoxigenic E. coli (VTEC) - VTEC O103	Verotoxigenic E. coli (VTEC) - VTEC O91
Meat from bovine animals	official food surveillance	Single	25g	394	6	1	2	3		
Meat from bovine animals - fresh - at processing plant	official food surveillance	Single	25g	180	3	1	1	1		
Meat from bovine animals - fresh - at retail	official food surveillance	Single	25g	196	2		1	1		
Meat from bovine animals - minced meat - intended to be eaten raw - at processing plant	official food surveillance	Single	25g	77	3		2	1		
Meat from bovine animals - minced meat - intended to be eaten raw - at retail	official food surveillance	Single	25g	295	9		1	8		
Meat from broilers (Gallus gallus)	official food surveillance	Single	25g	8	0					
Meat from pig	official food surveillance	Single	25g	152	1			1		
Meat from pig - minced meat - intended to be eaten raw	official food surveillance	Single	25g	50	0					
Meat from sheep	official food surveillance	Single	25g	87	16			16		
Meat from sheep - fresh - at processing plant	official food surveillance	Single	25g	19	2			2		
Meat from sheep - fresh - at retail	official food surveillance	Single	25g	62	13			13		
Meat from turkey	official food surveillance	Single	25g	26	0					
Milk, cows' - raw	<sup>1)</sup> official food surveillance	Single	25g	15	0					
Milk, cows' - raw - intended for direct human consumption	<sup>2)</sup> official food surveillance	Single	25g	117	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	Verotoxigenic E. coli (VTEC) - VTEC O103	Verotoxigenic E. coli (VTEC) - VTEC O91
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products <sup>3)</sup>	official food surveillance	Single	25g	318	56			56		
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk	official food surveillance	Single	25g	152	4		3	1		1
Meat from bovine animals - meat products - raw and intended to be eaten raw	official food surveillance	Single	25g	12	4		2	2		1
Meat from bovine animals and pig - minced meat - intended to be eaten raw	official food surveillance	Single	25g	373	12		1	11		
Meat from wild game - land mammals	official food surveillance	Single	25g	176	16		6	10		

## Comments:

- <sup>1)</sup> at farm (selled at farm with recommendation for heating of 10 min.)
- <sup>2)</sup> certified
- <sup>3)</sup> inkl. all milk

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Meat from bovine animals	Units tested	392	394

## 2.4.3 Escherichia coli, pathogenic in animals

### A. Verotoxigenic Escherichia coli in cattle (bovine animals)

#### Monitoring system

##### Sampling strategy

Data were collected from two sources. One data set contained sampling for various reasons (surveillance). The other data set was collected from veal calves in the framework of a national sampling plan (monitoring).

In the framework of the monitoring plan, VTEC were isolated from faeces of veal calves at farm. The overall sample size of 384 was distributed over the Federal Laender according to the number of veal calves housed in the respective land. Calves were selected randomly all year round.

#### Results of the investigation

##### Surveillance

VTEC were isolated from bovine herds in 13.1 % of 617 samples (2009: 5.9 %) in 2010. In calves the proportion of positive herds was 6.8 %. 2010 more herds were investigated and the number of positive showed higher values than in 2009.

##### Monitoring

Among the 302 faecal samples from veal calves at farm, 80 (26.5 %) were positive for VTEC.

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

Results show that VTEC can regularly be detected in faeces of veal calves. The proportion of positive samples was higher in the monitoring than in samples from calves collected for various reasons. The sample size in the monitoring was not fully achieved. This needs to be taken into account when data are assessed and compared over the years.

## B. Verotoxigenic E. coli (VTEC) in animal

### Monitoring system

#### Sampling strategy

Generally, there is no monitoring system in place. In 2010 a monitoring was carried out in veal calves at farm (see chapter on cattle).

### Results of the investigation

In 2010, VTEC could be found in pigs in 10.3 % of the herds. VTEC were also detected in herds of sheep (4/60, 6.7 %), and goats (3/16, 18.8 %). At pigs, VTEC O157 was detected in 2 animals.

### Additional information

Method: The federal states were requested to report results on VTEC examinations, where toxin production had been examined by means of SLT-PCR, ELISA or cyto-toxin testing. The results obtained for samples tested under a sampling plan are shown. In 2010 as in the previous years, VTEC testing was mainly performed by means of the BgVV-Dessau method.

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	Verotoxigenic E. coli (VTEC) - VTEC O103	Verotoxigenic E. coli (VTEC) - VTEC O26	Verotoxigenic E. coli (VTEC) - VTEC O91
Cats	official reports of the laender	Animal	25g	511	0						
Cattle (bovine animals)	official reports of the laender	Herd	25g	617	81		7	74	3	3	1
Cattle (bovine animals) - calves (under 1 year)	official reports of the laender	Herd	25g	426	29		5	24	3	2	
Dogs	official reports of the laender	Animal	25g	838	5	1		4			
Goats - at farm	official reports of the laender	Animal	25g	76	9	1		8			
Pigs	official reports of the laender	Animal	25g	1846	19	2	1	16		1	
Poultry, unspecified	<sup>1)</sup> official reports of the laender	Animal	25g	2430	0						
Sheep - at farm	official reports of the laender	Animal	25g	336	8		1	7			1
Solipeds, domestic	official reports of the laender	Animal	25g	722	1			1			
Pigs - mixed herds	official reports of the laender	Herd	25g	157	6	1	5			1	

## Comments:

<sup>1)</sup> Gallus gallus

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Pigs - mixed herds	Units tested		157
	Pigs - mixed herds	Total units positive for Escherichia coli, pathogenic - Verotoxigenic E. coli (VTEC)		6
	Pigs - mixed herds	Sample weight		25g
	Pigs - mixed herds	Verotoxigenic E. coli (VTEC) - VTEC non-O157		5
	Pigs - mixed herds	Source of information		official reports of the laender
	Pigs - mixed herds	Sampling unit		Herd
	Pigs - mixed herds	Verotoxigenic E. coli (VTEC) - VTEC O157		1
	Pigs - mixed herds	Verotoxigenic E. coli (VTEC) - VTEC O26		1

## 2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

### 2.5.1 General evaluation of the national situation

### 2.5.2 Mycobacterium in animals

#### A. Mycobacterium bovis in bovine animals

##### Notification system in place

Tuberculosis is a notifiable disease according to "Verordnung zum Schutz gegen die Tuberkulose des Rindes" of 20. March 1997.

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

Due to the long lasting control policy, tuberculosis in cattle remains a rare event in Germany.

## B. Mycobacterium bovis in farmed deer

### Monitoring system

#### Frequency of the sampling

Farmed deer are generally subject to meat inspection according to German legislation. Samples for laboratory analysis will only be collected in case of clinical suspicion.



Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex - M. avium subsp. avium	M. avium complex - M. avium subsp. hominissuis
Goats	official reports of the laender	Animal	44	0					
Pigs	official reports of the laender	Animal	1040	268	4	1	2	186	75
Sheep	official reports of the laender	Animal	1318	0					
Zoo animals, all	<sup>1)</sup> official reports of the laender	Animal	692	42	4	1	10	27	

## Comments:

<sup>1)</sup> incl. pets

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			
Deutschland	183977	12761126	183966	99.99	11	.01		4062	136	86	24
Total : <sup>1)</sup>	183977	12761126	183966	99.99	11	.01	N.A.	4062	136	86	24

## Comments:

<sup>1)</sup> N.A.

## 2.6 BRUCELLOSIS

### 2.6.1 General evaluation of the national situation

### 2.6.2 Brucella in animals

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis	Brucella spp., unspecified
Pigs	official reports of the laender	Animal	22563	0				
Wild boars	official reports of the laender	Animal	6129	910			1	909

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
Deutschland	155526	3025264	155526	100	0	0	2089	63854	0	83	0	85	0	0
Total : <sup>1)</sup>	155526	3025264	155526	100	0	0	2089	63854	0	83	0	85	0	0

Comments:

<sup>1)</sup> 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								
	Herds	Animals	Number of herds	%	Number of herds	%	Serological tests			Examination of bulk milk			Information about			Epidemiological investigation					
							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
Deutschland	183977	12761126	183974	100	0	0	22657	649137	0	44649	184308	1	1607	4	0	2432	1	2	0	321	0
Total : <sup>1)</sup>	183977	12761126	183974	100	0	0	22657	649137	0	44649	184308	1	1607	4	0	2432	1	2	0	321	0

## Comments:

<sup>1)</sup> N.A.

## 2.7 YERSINIOSIS

### 2.7.1 General evaluation of the national situation

### 2.7.2 Yersinia in foodstuffs

#### A. Y. enterocolitica in food

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

Surveillance: In food samples collected under the sampling plan, *Yersinia enterocolitica* (Y.e.) was detected in 2010 in several foods. In pork, Y.e. was found in 4.3 % of the samples (2009: 9.4 %). In meat products from pig, intended to be eaten raw, 5.3 % of the samples were positive for Y.e (2009: 5.2 %) with the serovars O:3 isolated in 7 of 10 samples and O:9 in 2 of 10 samples.

Table Yersinia in food

	Source of information	Sampling unit	Sample weight	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
Meat from bovine animals - fresh	official food surveillance	Single	25g	2	0						
Meat from bovine animals - meat products	<sup>1)</sup> official food surveillance	Single	25g	2	0						
Meat from bovine animals - minced meat	official food surveillance	Single	25g	66	0						
Meat from pig - fresh	official food surveillance	Single	25g	156	8	8			4		4
Meat from pig - meat products	<sup>2)</sup> official food surveillance	Single	25g	230	10	10			7	2	1
Meat from pig - minced meat	official food surveillance	Single	25g	27	0						
Milk, cows' - raw	<sup>3)</sup> official food surveillance	Single	25g	3	0						
Milk, cows' - raw - intended for direct human consumption	<sup>4)</sup> official food surveillance	Single	25g	29	1	1					1
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	<sup>5)</sup> official food surveillance	Single	25	43	4	4					4

## Comments:

- <sup>1)</sup> raw meat products
- <sup>2)</sup> raw meat products
- <sup>3)</sup> at farm (sold at farm with recommendation for heating of 10 min.)
- <sup>4)</sup> certified milk
- <sup>5)</sup> incl. all milk

Table Yersinia in food



## 2.7.3 Yersinia in animals

### A. Yersinia enterocolitica in pigs

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

The proportion of positive samples for Yersinia enterocolitica in pigs 2010 was lower than in 2009 (0.53 vs. 0.95 %).

In the typed isolates Y. enterocolitica O:3 was the predominant type, followed by O:9.

## 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
Cats	official reports of the laender	Animal	202	0						
Cattle (bovine animals)	<sup>1)</sup> official reports of the laender	Herd	836	12	12		9	11		
Dogs	official reports of the laender	Animal	246	6	6					6
Goats	official reports of the laender	Animal	75	1	1					1
Pigs	official reports of the laender	Herd	339	9	9		4	3		2
Poultry, unspecified	official reports of the laender	Animal	1094	0						
Sheep	<sup>2)</sup> official reports of the laender	Animal	293	2	2		2	2		
Solipeds, domestic	official reports of the laender	Animal	890	0						

### Comments:

<sup>1)</sup> 8 double isolations

<sup>2)</sup> 2 double isolations

## 2.8 TRICHINELLOSIS

### 2.8.1 General evaluation of the national situation

### 2.8.2 Trichinella in animals

#### A. Trichinella in horses

##### Monitoring system

###### Sampling strategy

meat inspection

###### Frequency of the sampling

each animal has to be tested

###### Type of specimen taken

diaphragm, tongue or masseter

###### Methods of sampling (description of sampling techniques)

artificial digestion

###### Case definition

meat which contains Trichinella muscle larva(e)

###### Diagnostic/analytical methods used

confirmation of isolate by Multiplex PCR

##### Results of the investigation including the origin of the positive animals

Trichinella positive horses have never been detected in Germany

##### Control program/mechanisms

###### The control program/strategies in place

yes

###### Recent actions taken to control the zoonoses

reporting/notification

##### Measures in case of the positive findings or single cases

destroy positive carcass, trace back to the farm where positive animal came from

##### Notification system in place

yes

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

Horses are considered to be Trichinella-free

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

no relevance



## B. Trichinella in pigs

Number of officially recognised Trichinella-free holdings

none

Categories of holdings officially recognised Trichinella-free

none

Officially recognised regions with negligible Trichinella risk

none

Monitoring system

Sampling strategy

General

meat inspection

Frequency of the sampling

General

Each animal has to be tested

Type of specimen taken

General

diaphragm

Methods of sampling (description of sampling techniques)

General

Artificial digestion (magnetic stirrer method, trichomatic 35); trichoscopic examination in exceptional cases

Case definition

General

Meat which contains Trichinella muscle larva(e)

Diagnostic/analytical methods used

General

Confirmation of isolate by Multiplex PCR

Preventive measures in place

yes

Control program/mechanisms

The control program/strategies in place

yes

Recent actions taken to control the zoonoses

routine meat inspection: reporting/notification

### Measures in case of the positive findings or single cases

Including the contingency plan in place: destroy positive carcass, trace back to the farm where positive animal came from

### Notification system in place

yes (see above)

### Results of the investigation including description of the positive cases and the verification of the *Trichinella* species

Fattening pigs raised under controlled housing conditions in integrated production system  
negligible risk

Fattening pigs not raised under controlled housing conditions in integrated production system

low risk (risk is higher than indoor housing)

Breeding sows and boars

low to negligible risk

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

German pigs are considered free of *Trichinella*. No positive findings have been reported.

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

no relevance

C. Trichinella spp., unspecified in animal - Wild boars

Monitoring system

Sampling strategy

meat inspection

Frequency of the sampling

each animal intended for meat consumption

Type of specimen taken

diaphragm and fore leg muscle or tongue

Methods of sampling (description of sampling techniques)

artificial digestion or trichinoscopic examination

Case definition

meat which contains Trichinella muscle larva(e)

Diagnostic/analytical methods used

confirmation of isolate by Multiplex PCR

Control program/mechanisms

The control program/strategies in place

yes

Recent actions taken to control the zoonoses

reporting/notification

Measures in case of the positive findings or single cases

destroy positive carcass

Notification system in place

yes

Results of the investigation including the origin of the positive animals

There are Trichinella-positive findings in wild boars. Specification of isolates revealed mainly *T. spiralis*.

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

Wild boars in Germany are a typical Trichinella reservoir (annual prevalence varies between 0.001 and 0.01%)

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

There is a risk of human trichinellosis due to consumption of wild boar meat

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella	T. spiralis	Trichinella spp., unspecified	T. nativa	T. pseudospiralis
Foxes	official reports of the laender	Animal	4440	14	7	5	1	1
Pigs	<sup>1)</sup> Statistics on meat inspection, Statistisches Bundesamt	Animal	58422565	1		1		
Solipeds, domestic	<sup>2)</sup> Statistics on meat inspection, Statistisches Bundesamt	Animal	9540	0				
Wild boars - wild	official reports of the laender	Animal	199003	10	9	1		

## Comments:

- <sup>1)</sup> Includes pigs from domestic production and imported pigs
- <sup>2)</sup> Includes horses from domestic production and imported horses



## 2.9 ECHINOCOCCOSIS

### 2.9.1 General evaluation of the national situation

#### A. Echinococcus spp. general evaluation

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

As in recent years, Echinococcus was mainly detected in foxes and most of the cases were E. multilocularis.

##### Additional information

Method: According to the reporting of the Laender some Laender have given information: Immunological histological chemistry, histological pathology, histology and microscopy

## 2.9.2 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
Cats	official reports of the laender	Animal		42	0			
Cattle (bovine animals)	official reports of the laender	Animal		1	1			1
Dogs	official reports of the laender	Animal		143	0			
Foxes	official reports of the laender	Animal		5823	976		906	70
Solipeds, domestic	official reports of the laender	Animal		1	1			1
Other animals	official reports of the laender	Animal		219	4		4	
Zoo animals, all	official reports of the laender	Animal		1	1		1	

## 2.10 TOXOPLASMOSIS

### 2.10.1 General evaluation of the national situation

### 2.10.2 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii	Toxoplasma spp., unspecified
Cats	official reports of the laender	Animal	794	2	1	1
Cattle (bovine animals)	official reports of the laender	Animal	256	0		
Dogs	official reports of the laender	Animal	259	0		
Goats	official reports of the laender	Animal	46	1		1
Pigs	official reports of the laender	Animal	450	0		
Sheep	official reports of the laender	Animal	303	33		33
Solipeds, domestic	official reports of the laender	Animal	22	0		

## 2.11 RABIES

### 2.11.1 General evaluation of the national situation

#### A. Rabies general evaluation

##### History of the disease and/or infection in the country

Animal species: foxes, wildlife, domestic animals

Sampling strategy: 8 foxes per 100km<sup>2</sup> and year with special emphasis on indicator animals (animals being rabid, showing abnormal behaviour, road kills, animals found dead etc.)

Frequency of the sampling: permanent sampling (all year round)

Type of specimen taken: brain tissue (cortex, hippocampus, cerebellum, medulla oblongata)

Case definition: A case of Rabies in definitive hosts is defined as a detection of rabies virus antigen or the isolation of rabies virus in the brain of the respective animal.

Diagnostic/analytical methods used: Fluorescent Antibody Test (FAT), Rabies Tissue Culture Infection Test (RTCIT), Reverse Transcriptase Polymerase Chain Reaction (RT-PCR), Real-time PCR

Notification system in place: Rabies is a notifiable disease

##### Recent actions taken to control the zoonoses

Vaccination policy: oral rabies vaccination of foxes (ORV) in endemic areas

The control programmes/ strategies in place: ORV

Measures in case of the positive findings or single cases: ORV

Other preventative measures than vaccination in place: voluntary vaccination of pets and other domestic animals, complementary hunting

## 2.11.2 Rabies in humans

### A. Rabies in humans

Reporting system in place for the human cases  
notifiable

## 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
Bats - wild	<sup>1)</sup> Friedrich-Loeffler-Institute	Animal		5	5	1		4
Dogs	<sup>2)</sup> Friedrich-Loeffler-Institute	Animal		1	1		1	

## Comments:

- <sup>1)</sup> only positive cases were reported  
<sup>2)</sup> Import control (coming from croatia)

## 2.12 STAPHYLOCOCCUS INFECTION

### 2.12.1 General evaluation of the national situation

### 2.12.2 Staphylococcus in foodstuffs

#### A. S. aureus, methicillin resistant (MRSA) in Food Meat from turkey - Monitoring - official sampling - objective sampling

##### Monitoring system

###### Sampling strategy

Monitoring data were collected in the framework of a national sampling plan on two stages of the food chain, namely at slaughter and at retail.

At slaughter, the total target sample size of 384 was assigned to the Federal Laender according to their slaughterhouse capacity for turkeys. At retail, the total target sample size of 384 was assigned to the Federal Laender according to their population.

Independent samples (carcass skin at slaughter and meat at retail) were collected at random. Samples were examined using a two step selective enrichment method (Mueller-Hinton-Broth with 6.5 % NaCl for 24 hrs followed by Trypton Soy broth with 75mg/l aztreonam and 3,5 mg/l cefoxitin for another 24 hrs. One loopful of this broth was plated on selective chromogenic Agar for MRSA. Samples were considered positive if typical colonies for MRSA grew on the chromogenic agar.

A sample was considered positive if any type of MRSA was detected in the 25 g sample using the bacteriological method. Isolates were supposed to be sent to the NRL for confirmation with molecular methods.

##### Results of the investigation

At slaughter, 65,5 % of the 359 turkey carcasses were positive for MRSA in 2010. Among the isolates submitted to the NRL and confirmed as MRSA, most were identified as spa-types assigned to CC398 (t011 and t034). However, some isolates were spa-types that were assigned to ST 5 and ST 9. Among the 460 fresh turkey meat samples at retail, 32.0 % were positive for MRSA. Isolates from turkey meat and turkey meat preparations submitted to the NRL and confirmed as MRSA were mainly (85 %) from spa types assigned to CC398. However, 14 % were from other spa-types that were assigned to ST 5 and ST 9.

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

Results indicate a substantial introduction of MRSA into the food chain via turkey carcasses and turkey meat.

##### Additional information

Not all MRSA isolates were submitted to the NRL for confirmation. However, experience of the NRL for coagulase positive staphylococci shows that only very few isolates that were identified with the cultural method described above cannot be confirmed with molecular methods.

## B. S. aureus, methicillin resistant (MRSA) in Food Milk, cows' - raw - at farm - Monitoring - official sampling - objective sampling

### Monitoring system

#### Sampling strategy

Monitoring data were collected in the framework of a national sampling plan at farm.

The total target sample size of 384 was assigned to the Federal Laender according to the number of dairy cows in the respective Land. An additional sampling frame was designed for farms producing certified milk intended to be consumed raw. All of these farms were supposed to be sampled.

Independent raw bulk tank milk samples were collected at random. Only farms with at least 20 lactating dairy cows were included.

Samples were examined using a two step selective enrichment method (Mueller-Hinton-Broth with 6.5 % NaCl for 24 hrs followed by Trypton Soy broth with 75mg/l aztreonam and 3,5 mg/l cefoxitin for another 24 hrs. One loopful of this broth was plated on selective chromogenic Agar for MRSA. Samples were considered positive if typical colonies for MRSA grew on the chromogenic agar.

A sample was considered positive if any type of MRSA was detected in the 25 ml sample using the described bacteriological method.

Isolates were supposed to be sent to the NRL for confirmation with molecular methods.

### Results of the investigation

In 14 of the 297 samples MRSA could be detected (4.7 %). All isolates from milk were assigned to CC398.

In 3/30 samples from farms producing certified milk, MRSA were isolated. The difference between the two types of farms were not significant.

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

The results indicate that MRSA also occur in dairy herds. This confirms recent reports on MRSA in dairy cows from several countries. The results reflect that MRSA may be present in raw milk. This confirms the need to heat treat milk before selling it for consumption. Further research is needed with respect to raw milk products. Results from farms producing certified milk intended to be consumed raw underline that this milk can harbour pathogens and should not be consumed by susceptible people such as children, elderly people, pregnant women and immunocompromised persons.

The sample size in the monitoring was not fully achieved. This needs to be taken into account when assessing and comparing the data over the years. The sample size for the farms producing certified milk was too low for a valid estimate of the prevalence.

### Additional information

Not all MRSA isolates were submitted to the NRL for confirmation. However, experience of the NRL for coagulase positive staphylococci shows that only very few isolates that were identified with the cultural method described above cannot be confirmed with molecular methods.



Table Staphylococcus in Food

	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
Meat from pig - fresh	official food surveillance	Single	25g	12		3				3
Meat from bovine animals - fresh	official food surveillance	Single	25g	14		5				5
Meat from bovine animals - minced meat	official food surveillance	Single	25g	5		1				1
Meat from sheep - fresh	official food surveillance	Single	25g	2		0				
Meat from broilers (Gallus gallus) - fresh	official food surveillance	Single	25g	69		15				15
Meat from turkey - fresh	official food surveillance	Single	25g	792		316				316
Meat from turkey - carcass	<sup>1)</sup> monitoring	Single	25g	359		235				235
Meat from duck	official food surveillance	Single	25g	2		1				
Meat from geese	official food surveillance	Single	25g	3		1				1
Milk, cows' - raw	<sup>2)</sup> official food surveillance	Single	25g	6						
Milk, cows' - raw - intended for direct human consumption	<sup>3)</sup> official food surveillance	Single	25g	69		1				1
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products	<sup>4)</sup> official food surveillance	Single	25g	216		5				5
Meat from turkey - fresh - at retail	monitoring	Single	25g	460		147				
Milk, cows' - at farm - Monitoring - official sampling - objective sampling	monitoring	Single	25g	297		14				
Milk, cows' - raw - intended for direct human consumption - at farm	monitoring	Single	25g	30		3				

## Table Staphylococcus in Food

### Comments:

- 1) skin sample at slaughter
- 2) at farm (selled at farm with recommendation for heating of 10 min.)
- 3) certified milk
- 4) incl. all milk

## 2.12.3 Staphylococcus in animals

### A. S. aureus, methicillin resistant (MRSA) in Animals Cattle (bovine animals) - calves (under 1 year) - for slaughter - at slaughterhouse - animal sample - Monitoring - official sampling - objective sampling

#### Monitoring system

##### Sampling strategy

Nasal swabs were collected from veal calves at slaughter. The target sample size of 384 was assigned to the Federal Laender according to their slaughterhouse capacity for veal calves. Calves were selected randomly all year round. Samples were examined using a two step selective enrichment method (Mueller-Hinton-Broth with 6.5 % NaCl for 24 hrs followed by Trypton Soy broth with 75mg/l aztreonam and 3,5 mg/l cefoxitin for another 24 hrs. One loopful of this broth was plated on selective chromogenic Agar for MRSA. Samples were considered positive if typical colonies for MRSA grew on the chromogenic agar.

A sample was considered positive if any type of MRSA was detected in the 25 g sample using the bacteriological method. Isolates were supposed to be sent to the NRL for confirmation with molecular methods.

#### Results of the investigation

MRSA were detected in 35.1 % of the 350 nasal swabs.

All isolates submitted to the NRL and confirmed as MRSA were from spa-types assigned to CC398, mostly t011 and t034.

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

The results confirm the high prevalence of MRSA in veal calves that has been reported by other MS. The sample size was not fully achieved. This needs to be taken into account when assessing and comparing the data over the years.

#### Additional information

Not all MRSA isolates were submitted to the NRL for confirmation. However, experience of the NRL for coagulase positive staphylococci shows that only very few isolates that were identified with the cultural method described above cannot be confirmed with molecular methods.

## B. S. aureus, methicillin resistant (MRSA) in animal

### Monitoring system

#### Sampling strategy

A monitoring was carried out collecting dust samples in veal calf operations and in turkey flocks. Separate sampling frames for the two types of farms were designed based on the number of the respective animals in the respective federal state. Sampling in the turkey flocks was carried out along with the testing procedures foreseen in Reg. (EC) No. 584/2008.

### Results of the investigation

19.6 % of the 296 veal calf farms that were tested were positive in 2010. Of the 112 turkey flocks examined, 19.6 % were positive for MRSA.

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

Results show that MRSA are widespread in the turkey and veal calf population indicating that MRSA detected in food at retail may originate from contaminated farms.

## 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
Turkeys <sup>1)</sup>	Monitoring	Flock		112		22				22
Cattle (bovine animals) - calves (under 1 year) - veal calves - at farm - environmental sample - dust - Monitoring - official sampling - objective sampling	monitoring	Herd		296		58				

### Comments:

<sup>1)</sup> dust samples at farm

## 2.13 Q-FEVER

### 2.13.1 General evaluation of the national situation

### 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)	official reports of the laender	Herd	1382	245	245
Goats	official reports of the laender	Herd	83	9	9
Sheep	official reports of the laender	Herd	226	31	31
Cattle (bovine animals) - mixed herds	x	---	0	0	0
Goats - in total	official reports of the laender	Single	956	113	113
Sheep - in total	official reports of the laender	Single	13146	552	552

The following amendments were made:

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Goats - in total	Source of information		official reports of the laender
	Goats - in total	Total units positive for Coxiella (Q-fever)		113
	Sheep - in total	Total units positive for Coxiella (Q-fever)		552
	Goats - in total	C. burnetii		113
	Goats - in total	Units tested		956
	Sheep - in total	Units tested		13146
	Sheep - in total	C. burnetii		552
	Goats - in total	Sampling unit		Single
	Sheep - in total	Sampling unit		Single
	Sheep - in total	Source of information		official reports of the laender
	Cattle (bovine animals) - mixed herds	C. burnetii	552	0
	Cattle (bovine animals) - mixed herds	Units tested	13146	0
	Cattle (bovine animals) - mixed herds	Total units positive for Coxiella (Q-fever)	552	0
	Cattle (bovine animals) - mixed herds	Sampling unit	Animal	---
	Cattle (bovine animals) - mixed herds	Source of information	official reports of the laender	x

Date of Modification	Row name	Column name	Old value	New value
2012-01-11	Cattle (bovine animals) - mixed herds	Units tested		13146
	Cattle (bovine animals) - mixed herds	Source of information		official reports of the laender
	Cattle (bovine animals) - mixed herds	Total units positive for Coxiella (Q-fever)		552
	Cattle (bovine animals) - mixed herds	Sampling unit		Animal
	Cattle (bovine animals) - mixed herds	C. burnetii		552



### 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

#### A. Antimicrobial resistance of E. coli in Animals

##### Sampling strategy used in monitoring

###### Methods of sampling (description of sampling techniques)

Escherichia coli were isolated from faeces of Gallus gallus (laying hen and broiler flocks), turkeys and veal calves at farm. Moreover, isolates were collected from caecum content of turkeys at slaughter. Samples were collected in the framework of a national sampling plan.

Sample sizes were assigned to the Federal Länder according to the number of animals of the respective species in the respective Land (sampling at farm), or according to the number of slaughtered turkeys (sampling at slaughterhouse).

###### Procedures for the selection of isolates for antimicrobial testing

All isolates submitted to the NRL for Antimicrobial Resistance were tested.

##### Results of the investigation

In laying hens the majority of E. coli isolates was susceptible to all antimicrobials tested. In contrast, more than 90 % of the isolates from broilers, turkeys (at farm and at slaughter) and from veal calves were resistant to at least one antimicrobial, most of them (ca 40 %) to more than 4 antimicrobial classes. Resistance to aminoglycosides was highest in veal calves. Resistance to 3rd generation cephalosporins was higher in broilers (13.5 %) and veal calves (10.3 %) than in turkeys (0-2.2 % in isolates from the different origins). Resistance to (fluoro)quinolones was also higher in broilers (>50 %) than in the other animal species (30 to 40 %). In contrast, resistance to tetracyclines was less frequent in broilers (56.5 %) than in turkeys and veal calves (75 to 85 %). Resistance to ampicillin was high (>75 %) in all three species.

In isolates from laying hens, only resistance to ampicillin, sulfamethoxazole and tetracycline was observed in more than 15 % (16 to 19). However, there was no antimicrobial that all isolates were susceptible to.

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

Results confirm data from 2009 indicating that animals raised for meat production carry isolates that are more resistant to antimicrobials than laying hens and dairy cows (see results for isolates from milk in the respective chapter). The reasons for the observed differences need to be analysed in specific studies. High resistance rates to fluoroquinolones in isolates from poultry meat are a cause of concern as these drugs are considered critically important for human medicine by WHO.

## B. Antimicrobial resistance of E. coli in Food

### Sampling strategy used in monitoring

#### Methods of sampling (description of sampling techniques)

Escherichia coli was isolated from meat of turkeys at retail and from raw bulk tank milk samples of dairy cows at farm in the framework of a national sampling plan. Samples at retail were assigned to the Federal Laender according to their population. Samples at farm were assigned according to the number of dairy cows in the respective Land.

#### Procedures for the selection of isolates for antimicrobial testing

All isolates submitted to the NRL were tested.

### Results of the investigation

The proportion of isolates that were resistant to at least one antimicrobial was extremely high in meat from turkeys (94.5 %) and substantially lower in raw milk (24 %).

Multiresistance (>3 classes of antimicrobials) was more often observed in E. coli from turkey meat samples (61 %) than in isolates from milk (4 %).

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

The results indicate that there are substantial differences in the E coli isolates from different foods. Results in isolates from turkey meat are in line with those from turkeys at farm and at slaughter and with results on isolates in turkey meat obtained in 2009. Likewise, results on isolates from bulk tank milk are in line with those from 2009. High resistance rates to fluoroquinolones are a cause of concern as these substances are considered critically important for human medicine by WHO.

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Meat from turkey - fresh - at retail - Monitoring - quantitative data [Dilution method ]

Concentration ( $\mu\text{g/ml}$ ), number of isolates with a concentration of inhibition equal to

Escherichia coli, non-pathogenic	Meat from turkey - fresh - at retail - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	$\leq 0.008$	$> 0.008$	0.015	$> 0.016$	0.03	$> 0.03$	0.06	$> 0.06$	0.12	$> 0.12$	0.25	$> 0.25$	0.5	$> 0.5$	1	$> 1$	2	$> 2$	4	$> 4$	8	$> 8$	16
Amphenicols - Chloramphenicol	16	289	97																	8		75		100		9
Amphenicols - Florfenicol	16	289	5																	8		126		118		32
Tetracyclines - Tetracycline	8	289	242															31		15		1				2
Fluoroquinolones - Ciprofloxacin	0.03	289	99	13		133		44		8		5		29		17		7		2				7	24	
Quinolones - Nalidixic acid	16	289	87																			197		2		3
Trimethoprim	2	289	144													138		6		1				1		
Aminoglycosides - Streptomycin	16	289	162																	1		27		71		28
Aminoglycosides - Gentamicin	2	289	29											79		134		42		5		1		1		8
Aminoglycosides - Kanamycin	8	289	67																			203		19		1
Penicillins - Ampicillin	8	289	248															9		26		6				
Cephalosporins - Cefotaxim	0.25	289	6							221		55		7				1		1				4		
Cephalosporins - Ceftazidim	0.5	289	5											278		6		2		1		1		1		
Sulphonamides - Sulfamethoxazol	256	289	206																					26		27

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Meat from turkey - fresh - at retail - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Meat from turkey - fresh - at retail - Monitoring																		
	289																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		11		25	61													2	64
Amphenicols - Florfenicol		3			2													2	64
Tetracyclines - Tetracycline		2		84	154													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		2		8	77													4	64
Trimethoprim			143															0.5	32
Aminoglycosides - Streptomycin		22		24		53	63											2	128
Aminoglycosides - Gentamicin		7	12															0.25	32
Aminoglycosides - Kanamycin		2		2			62											4	128
Penicillins - Ampicillin			248															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		26		2		2							206					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Milk, cows' - raw milk for manufacture - at farm - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic	Milk, cows' - raw milk for manufacture - at farm - Monitoring																										
	Isolates out of a monitoring program (yes/no)																										
	Number of isolates available in the laboratory																										
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	95	2																	1		24		65		3	
Amphenicols - Florfenicol	16	95	0																	4		41		47		3	
Tetracyclines - Tetracycline	8	95	5															42		39		7		2			
Fluoroquinolones - Ciprofloxacin	0.03	95	6	4		71		14		1		1		2				1							1		
Quinolones - Nalidixic acid	16	95	5																			86		4			
Trimethoprim	2	95	3													86		5		1							
Aminoglycosides - Streptomycin	16	95	5																	1		18		64		7	
Aminoglycosides - Gentamicin	2	95	0											26		55		9		5							
Aminoglycosides - Kanamycin	8	95	6																			84		5		1	
Penicillins - Ampicillin	8	95	5													2		8		42		37		1		1	
Cephalosporins - Cefotaxim	0.25	95	3							84		8										1	2				
Cephalosporins - Ceftazidim	0.5	95	3											92						2						1	
Sulphonamides - Sulfamethoxazol	256	95	17																					33		19	

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Milk, cows' - raw milk for manufacture - at farm - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Milk, cows' - raw milk for manufacture - at farm - Monitoring																		
	95																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol				1	1													2	64
Amphenicols - Florfenicol																		2	64
Tetracyclines - Tetracycline		1		1	3													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid				2	3													4	64
Trimethoprim			3															0.5	32
Aminoglycosides - Streptomycin		1		1		2	1											2	128
Aminoglycosides - Gentamicin																		0.25	32
Aminoglycosides - Kanamycin				1		1	3											4	128
Penicillins - Ampicillin			4															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		22		4									17					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Turkeys - at farm - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - at farm - Monitoring																										
	127																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	127	54																	3		21		44		5	
Amphenicols - Florfenicol	16	127	3																	1		48		57		18	
Tetracyclines - Tetracycline	8	127	98															16		10		3				1	
Fluoroquinolones - Ciprofloxacin	0.03	127	43	2		60		22		2		2		11		5				1		1		5	16		
Quinolones - Nalidixic acid	16	127	42																			84		1			
Trimethoprim	2	127	53													71		3							1		
Aminoglycosides - Streptomycin	16	127	69																			12		36		10	
Aminoglycosides - Gentamicin	2	127	17											22		68		19		1		2		2		5	
Aminoglycosides - Kanamycin	8	127	39																			84		4		2	
Penicillins - Ampicillin	8	127	98															4		13		12					
Cephalosporins - Cefotaxim	0.25	127	0							90		32		5													
Cephalosporins - Ceftazidim	0.5	127	0											123		4											
Sulphonamides - Sulfamethoxazol	256	127	80																					24		14	



Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Turkeys - at farm - Monitoring - quantitative data [ Dilution method

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - at farm - Monitoring																		
	127																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		6		14	34													2	64
Amphenicols - Florfenicol		1			2													2	64
Tetracyclines - Tetracycline		2		26	69													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		1		4	37													4	64
Trimethoprim			52															0.5	32
Aminoglycosides - Streptomycin		15		18		16	20											2	128
Aminoglycosides - Gentamicin		1	7															0.25	32
Aminoglycosides - Kanamycin				2			35											4	128
Penicillins - Ampicillin			98															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim																		0.25	16
Sulphonamides - Sulfamethoxazol		8		1								1	79					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - Monitoring																										
	200																										
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16	
Amphenicols - Chloramphenicol	16	200	51																	1		46		94		8	
Amphenicols - Florfenicol	16	200	5																	6		67		98		24	
Tetracyclines - Tetracycline	8	200	113															42		39		5		1		2	
Fluoroquinolones - Ciprofloxacin	0.03	200	108	3		69		20		1		4		45		17		3		3		8		7	20		
Quinolones - Nalidixic acid	16	200	106																			91		3			
Trimethoprim	2	200	122													75		3								1	
Aminoglycosides - Streptomycin	16	200	121																	1		20		45		13	
Aminoglycosides - Gentamicin	2	200	12											46		108		28		6				1		6	
Aminoglycosides - Kanamycin	8	200	36																			157		7		3	
Penicillins - Ampicillin	8	200	156															3		23		17		1			
Cephalosporins - Cefotaxim	0.25	200	27							139		33		1		1		3		2		7	14				
Cephalosporins - Ceftazidim	0.5	200	27											165		8		6		2		5		6		6	
Sulphonamides - Sulfamethoxazol	256	200	153																					18		17	

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Gallus gallus (fowl) - broilers - at farm - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Gallus gallus (fowl) - broilers - at farm - Monitoring																		
	200																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		8		14	29													2	64
Amphenicols - Florfenicol		3		1	1													2	64
Tetracyclines - Tetracycline		2		42	67													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		4		17	85													4	64
Trimethoprim			121															0.5	32
Aminoglycosides - Streptomycin		16		15		27	63											2	128
Aminoglycosides - Gentamicin		1	4															0.25	32
Aminoglycosides - Kanamycin						1	32											4	128
Penicillins - Ampicillin			156															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim	2																	0.25	16
Sulphonamides - Sulfamethoxazol		11		1									153					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic	Gallus gallus (fowl) - laying hens - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	1001	29																	17		255		662		38
Amphenicols - Florfenicol	16	1001	6																	24		398		548		25
Tetracyclines - Tetracycline	8	1001	160															363		417		54		7		5
Fluoroquinolones - Ciprofloxacin	0.03	1001	74	37		683		207		9		8		35		11		1		2				2	6	
Quinolones - Nalidixic acid	16	1001	55																			937		8		1
Trimethoprim	2	1001	78													874		43		6		2		3		2
Aminoglycosides - Streptomycin	16	1001	85																	4		199		640		73
Aminoglycosides - Gentamicin	2	1001	30											208		567		174		22		8		8		5
Aminoglycosides - Kanamycin	8	1001	55																			912		34		2
Penicillins - Ampicillin	8	1001	188													3		67		413		306		24		1
Cephalosporins - Cefotaxim	0.25	1001	27							794		164		16		2				2		2	21			
Cephalosporins - Ceftazidim	0.5	1001	28											945		28		10		4		1		6		4
Sulphonamides - Sulfamethoxazol	256	1001	163																					408		218

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Gallus gallus (fowl) - laying hens - at farm - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic  Isolates out of a monitoring program (yes/no)  Number of isolates available in the laboratory	Gallus gallus (fowl) - laying hens - at farm - Monitoring																		
	1001																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		6		12	11													2	64
Amphenicols - Florfenicol		3		2	1													2	64
Tetracyclines - Tetracycline		16		70	69													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		2		9	44													4	64
Trimethoprim		1	70															0.5	32
Aminoglycosides - Streptomycin		16		23		23	23											2	128
Aminoglycosides - Gentamicin		2	7															0.25	32
Aminoglycosides - Kanamycin		3		1		2	47											4	128
Penicillins - Ampicillin		5	182															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Ceftazidim	3																	0.25	16
Sulphonamides - Sulfamethoxazol		183		29						1		1	161					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Cattle (bovine animals) - calves (under 1 year) - veal calves - at farm - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic	Cattle (bovine animals) - calves (under 1 year) - veal calves - at farm - Monitoring																									
	Isolates out of a monitoring program (yes/no)																									
	Number of isolates available in the laboratory																									
Antimicrobials:	272																									
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	272	120																	1		48		87		16
Amphenicols - Florfenicol	16	272	52																	4		86		100		30
Tetracyclines - Tetracycline	8	272	232															15		19		3		3		3
Fluoroquinolones - Ciprofloxacin	0.03	272	114	12		110		36		7		7		18		20		10		8				7	37	
Quinolones - Nalidixic acid	16	272	103																			164		1		4
Trimethoprim	2	272	206													64		2						2		
Aminoglycosides - Streptomycin	16	272	216																			10		27		19
Aminoglycosides - Gentamicin	2	272	65											59		106		35		7		1		6		23
Aminoglycosides - Kanamycin	8	272	142																			125		5		1
Penicillins - Ampicillin	8	272	208															5		28		29		2		2
Cephalosporins - Cefotaxim	0.25	272	28							170		62		12		9				2			17			
Cephalosporins - Ceftazidim	0.5	272	21											232		19		5		5		6		2		2
Sulphonamides - Sulfamethoxazol	256	272	235																					15		10

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Cattle (bovine animals) - calves (under 1 year) - veal calves - at farm - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Cattle (bovine animals) - calves (under 1 year) - veal calves - at farm - Monitoring																		
	272																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		5		9	106													2	64
Amphenicols - Florfenicol		5		7	40													2	64
Tetracyclines - Tetracycline		7		55	167													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		1		11	91													4	64
Trimethoprim			204															0.5	32
Aminoglycosides - Streptomycin		21		26		57	112											2	128
Aminoglycosides - Gentamicin		16	19															0.25	32
Aminoglycosides - Kanamycin		1		1		1	138											4	128
Penicillins - Ampicillin		2	204															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim	1																	0.25	16
Sulphonamides - Sulfamethoxazol		10		2								1	234					8	1024

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]

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

Escherichia coli, non-pathogenic  Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																									
	356																									
	Cut-off value	N	n	<=0.008	>0.008	0.015	>0.016	0.03	>0.03	0.06	>0.06	0.12	>0.12	0.25	>0.25	0.5	>0.5	1	>1	2	>2	4	>4	8	>8	16
Amphenicols - Chloramphenicol	16	356	147																	8		80		108		13
Amphenicols - Florfenicol	16	356	9																	15		148		136		48
Tetracyclines - Tetracycline	8	356	285															33		31		3		4		3
Fluoroquinolones - Ciprofloxacin	0.03	356	118	13		149		76		5		3		29		29		9		1		3		10	29	
Quinolones - Nalidixic acid	16	356	107																			238		6		5
Trimethoprim	2	356	151												183		17		5					2		
Aminoglycosides - Streptomycin	16	356	200																	1		18		92		45
Aminoglycosides - Gentamicin	2	356	34											56		185		69		12				3		11
Aminoglycosides - Kanamycin	8	356	115																			237		4		
Penicillins - Ampicillin	8	356	297															4		27		26		2		1
Cephalosporins - Cefotaxim	0.25	356	8							264		70		14		1				3		1	3			
Cephalosporins - Ceftazidim	0.5	356	6											337		13		1		1		2		1		
Sulphonamides - Sulfamethoxazol	256	356	237																					50		39



Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - quantitative data [ Dilution method ]

Escherichia coli, non-pathogenic Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory	Turkeys - at slaughterhouse - animal sample - caecum - Monitoring																		
	356																		
	>16	32	>32	64	>64	128	>128	256	>256	512	>512	1024	>1024	2048	>2048	4096	>4096	lowest	highest
Amphenicols - Chloramphenicol		29		44	74													2	64
Amphenicols - Florfenicol		4			5													2	64
Tetracyclines - Tetracycline		14		87	181													1	64
Fluoroquinolones - Ciprofloxacin																		0.008	8
Quinolones - Nalidixic acid		5		8	94													4	64
Trimethoprim		2	147															0.5	32
Aminoglycosides - Streptomycin		42		27		49	82											2	128
Aminoglycosides - Gentamicin		7	13															0.25	32
Aminoglycosides - Kanamycin		3		2		1	109											4	128
Penicillins - Ampicillin		2	294															0.5	32
Cephalosporins - Cefotaxim																		0.06	4
Cephalosporins - Cefazidim	1																	0.25	16
Sulphonamides - Sulfamethoxazol		26		2		2				1			236					8	1024

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 E. faecalis in Animals

Test Method Used	Standard methods used for testing

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

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

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

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

Test Method Used

Standard methods used for testing

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

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

Test Method Used

Standard methods used for testing

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



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

Test Method Used

Standard methods used for testing

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

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

Test Method Used

Standard methods used for testing

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

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

Test Method Used

Standard methods used for testing

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

## 4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

## 4.1 ENTEROBACTER SAKAZAKII

### 4.1.1 General evaluation of the national situation

### 4.1.2 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	official food surveillance	Single	25g	33	0	
Infant formula - dried	<sup>1)</sup> official food surveillance	Single	25g	14	0	
Bakery products - cakes	official food surveillance	Single	25g	3	1	1
Infant formula (below 6 month)	<sup>2)</sup> official food surveillance	Single	25g	583	1	1

#### Comments:

<sup>1)</sup> from 6 month

<sup>2)</sup> Cronobacter sp.

## 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

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins	Enterotoxin C	Enterotoxin D
Cheeses made from cows' milk - hard - made from pasteurised milk	official food surveillance	Single	25g	19	0		
Cheeses made from cows' milk - hard - made from raw or low heat-treated milk	official food surveillance	Single	25g	3	0		
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk	official food surveillance	Single	25g	5	0		
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk	official food surveillance	Single	25g	1	0		
Cheeses made from goats' milk - hard - made from pasteurised milk	official food surveillance	Single	25g	3	0		
Cheeses made from goats' milk - hard - made from raw or low heat-treated milk	official food surveillance	Single	25g	2	0		

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins	Enterotoxin C	Enterotoxin D
Cheeses made from sheep's milk - hard - made from pasteurised milk	official food surveillance	Single	25g	3	0		
Cheeses made from sheep's milk - hard - made from raw or low heat-treated milk	official food surveillance	Single	25g	4	1	1	
Dairy products (excluding cheeses) - milk powder and whey powder	official food surveillance	Single	25g	53	0		
Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products	official food surveillance	Single	25g	2	1		1

## 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

In Germany, information on food-borne outbreaks is collected through two parallel reporting systems. On the national level, data on human infections is collected by the Robert Koch Institute (RKI), whereas data on food implicated in outbreaks is collected by the Federal Institute for Risk Assessment (BfR).

The surveillance of infectious diseases in humans is regulated by the Protection Against Infection Act (Infektionsschutzgesetz) that came into effect in 2001. It assigns the RKI the task to compile, evaluate and analyse notification data on human infections at the national level. Laboratories are required to report acute infections caused by notifiable pathogens to the local public health office, and physicians are required to report suspected or verified cases of notifiable communicable diseases. Cases are investigated by the local public health offices and the information obtained is forwarded (anonymised) electronically via the state health authorities to the RKI. Outbreak reporting is integrated into the notification system. Individual cases can be linked via a common outbreak code. Information on place, suspected source or vehicle of the outbreak, and degree of evidence (case control study, cohort study, detection of pathogen in consumed foodstuffs etc.) collected by local health authorities in collaboration with local food authorities is included. Multiple local outbreaks can be linked to regional or multi-state outbreaks on the state or national level.

Changes relevant for norovirus outbreaks reported to EFSA by Germany:

The reference definition for norovirus cases, i.e., the criteria for forwarding case information from the local public health offices via the state health authorities to the RKI was changed. Beginning January 1, 2011, only information on laboratory-confirmed cases of norovirus gastroenteritis is being forwarded to the RKI. As in previous years, an outbreak caused by norovirus has to include at least 2 cases fulfilling the reference definition (i.e., now has to include 2 cases of laboratory-confirmed norovirus gastroenteritis). To allow comparability of data, the new reference definition also applies retrospectively to all cases reported since 2001. This results in a lower number of reported food-borne norovirus outbreaks (with fewer cases) in 2010 compared to previous years.

In addition to the infectious disease reporting system of the RKI, a reporting system collecting detailed information on the food implicated in outbreaks was established in 2005 at the BfR. It covers food-borne outbreaks caused by bacteria, viruses, parasites and toxins. Through this reporting system information on the incriminated food vehicle and on laboratory results regarding relevant food samples collected during the outbreak investigation is gathered by the local food authorities who cooperate with the local public health offices. The information is forwarded directly or via the state authorities to the BfR following the outbreak investigation. In 2008 a new national regulation concerning the reporting system for foodstuffs involved in food-borne outbreaks (BELA) came into force. Reporting data on food-borne outbreaks has been mandatory for German federal states since August 2008. Finally the results of the two national systems are combined and reported to EFSA. The reporting deadline for food-borne outbreaks in 2010 was March 31, 2011.

### Description of the types of outbreaks covered by the reporting:

For infectious disease surveillance, an outbreak is defined as two or more epidemiologically linked cases that meet the reference definition. General and household-related outbreaks are reported. All causative agents listed in the Zoonoses Directive (Directive 2003/99/EC, Annex I, A, B) are monitored. Information on place of exposure is routinely collected allowing categorisation of the type of outbreak. The system collecting data on the foodstuff implicated in outbreaks also covers outbreaks caused by bacterial toxins

and other causative agents (e.g. histamine). Outbreaks are categorised as food-borne with weak evidence if the local public health office investigating the outbreak provided information on suspected foodstuffs in the electronic outbreak reporting system (e.g. as free text) or indicated that a meal was suspected, but the individual food vehicle was indeterminable. For the purpose of this report, food-borne outbreaks were considered as “strong evidence” if the causative agent had been detected in a food vehicle or its component, or in the food chain or its environment, or if a food vehicle had been incriminated by evidence from a case-control or a cohort study. All food-borne outbreaks in 2010 reported with a detailed dataset fulfill the definition of “verified outbreaks”, analogous to the EFSA reporting requests that had been valid until 2009. Unfortunately, the timeframe given by EFSA to adapt the dataset to the new evidence categories (weak or strong evidence) was very short and, therefore, implementation of any changes in outbreak reporting on the national level was not possible. Therefore, the EFSA category “Detection of indistinguishable causative agent in humans” was chosen without sufficient characterization of the causative agent in some outbreaks.

### National evaluation of the reported outbreaks in the country:

#### Trends in numbers of outbreaks and numbers of human cases involved

In 2010, a total of 40 food-borne outbreaks with strong evidence were reported to RKI and BfR, compared to 35 in 2009. Of those, 33 outbreaks had been reported via both reporting systems. At least 500 persons were affected by food-borne outbreaks with strong evidence in 2010 (2009: 583). The number of involved human cases was unknown for 6 outbreaks with strong evidence caused by bacterial toxins and other causative agents (e.g. histamine), which are not notifiable in the surveillance system of infectious diseases in humans. The majority of these 6 outbreaks was reported exclusively in the system collecting data on the foodstuff implicated.

In 2010, 399 (2009: 567) food-borne outbreaks with weak evidence were reported involving at least 1,878 cases (2009: 2,571). The decrease in the number of food-borne outbreaks with weak evidence is likely caused by a decrease in the number of Salmonella outbreaks as well as an apparent decrease in the number of norovirus outbreaks that resulted from a modification of the reference definition for norovirus cases (see above).

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

Of the 40 verified food-borne outbreaks, 18 were caused by Salmonella spp., of which 11 were serotyped as Salmonella Enteritidis. The other 22 verified food-borne outbreaks were caused by norovirus (5), Clostridium spp. (3), Campylobacter jejuni (3), Listeria monocytogenes (1), E. coli, pathogenic (1) or intoxications due to histamine (4), Bacillus cereus (3) and Staphylococcus aureus (2).

Mixed or buffet meals were the most frequently reported food-vehicles identified (12). These outbreaks were caused by Salmonella spp. (6), Staphylococcus aureus (1), Clostridium perfringens (1), Bacillus cereus (2) and norovirus (2). Of the 3 outbreaks mentioned in the category “pig meat and products thereof”, 2 were caused by Salmonella spp. and 1 by Clostridium perfringens. Both outbreaks listed in the food category “bakery products” were caused by Salmonella Enteritidis.

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

The place of exposure was available for 38 of the 40 food-borne outbreaks with strong evidence reported in 2010. Of these, 16 occurred in households and 11 in restaurants. 5 outbreaks happened in schools or in a kindergarten.

The largest outbreak reported with detailed data, caused by norovirus, occurred in a hotel and caused 61 human cases (including 43 symptomatic cases without laboratory confirmation as identified in a cohort

study).

One outbreak was caused by the hemp seed ingredient of a food supplement contaminated with *Salmonella* Montevideo. This outbreak resulted in 4 human cases, one patient was hospitalised.

For 10 outbreaks “catering services or restaurants” and for 4 outbreaks “domestic kitchen” were identified as the “place of origin of problem”. As in former years it was not possible to report this variable for all outbreaks, because it is often difficult to determine, where exactly the contamination or the mishandling of the implicated food occurred. Contamination of foodstuff with zoonotic agents often happens in primary production or during slaughtering but in addition mishandling during food preparation is necessary to cause food-borne outbreaks.

#### Evaluation of the severity and clinical picture of the human cases

The proportion of hospitalised cases was 14% for those food-borne outbreaks with strong evidence where the number of cases and the proportion of hospitalised cases were known (33 of 40). In 2010, 2 persons died in food-borne outbreaks with strong evidence (2009: 4). One death was caused by *Listeria monocytogenes* infection, and one death was caused by *Salmonella* infection.

The proportion of hospitalised cases was 15% for outbreaks with weak evidence. One person died from a *Salmonella* Typhimurium infection.

#### Control measures or other actions taken to improve the situation

All notified food-borne outbreaks should be investigated by the local public health office in collaboration with the local food authority. The investigation includes interviews with the notified cases conducted by the local public health office. Information on consumed food-stuffs is then provided to the local food authority. In case of widespread epidemics, investigations are supported by the state health and state food and veterinary authorities or the RKI and BfR. Additionally, RKI and the state health authorities offer training for local public health officers on epidemiological methods required for investigations of food-borne outbreaks. Support for outbreak investigations by fellows involved in the two-year Postgraduate Training for Applied Epidemiology (PAE), which is hosted at RKI is also available upon request. Since 2009 several national monitoring programmes on zoonotic agents along the food chain have been implemented. Furthermore, Germany operates risk based national coordinated control programmes included in the Federal control plan. In these programmes standardised collection of data provides a better insight into the situation of food safety. To prevent mishandling of food in private households, the consumer education has been the focus of numerous activities of the BfR.

Table Foodborne Outbreaks: summarised data

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Salmonella - S. Typhimurium	36	204	61	0	1	37
Salmonella - S. Enteritidis	138	686	133	0	11	149
Salmonella - Other serovars	23	81	17	1	6	29
Campylobacter	146	381	24	0	3	149
Listeria - Listeria monocytogenes	0	0	0	0	1	1
Listeria - Other Listeria	0	0	0	0	0	0
Yersinia	5	14	1	0	0	5
Escherichia coli, pathogenic -	4	12	0	0	1	5
Bacillus - B. cereus	0	0	0	0	3	3
Bacillus - Other Bacillus	0	0	0	0	0	0
Staphylococcal enterotoxins	0	0	0	0	2	2
Clostridium - Cl. botulinum	0	0	0	0	1	1
Clostridium - Cl. perfringens	0	0	0	0	2	2
Clostridium - Other Clostridia	0	0	0	0	0	0
Other Bacterial agents - Brucella	0	0	0	0	0	0

Germany - 2010 Report on trends and sources of zoonoses

	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Other Bacterial agents - Shigella	5	15	0	0	0	5
Other Bacterial agents - Other Bacterial	4	10	0	0	0	4
Parasites - Trichinella	0	0	0	0	0	0
Parasites - Giardia	4	10	0	0	0	4
Parasites - Cryptosporidium	1	4	0	0	0	1
Parasites - Anisakis	0	0	0	0	0	0
Parasites - Other Parasites	0	0	0	0	0	0
Viruses - Norovirus	31	457	33	0	5	36
Viruses - Hepatitis viruses	2	4	4	0	0	2
Viruses - Other Viruses	0	0	0	0	0	0
Other agents - Histamine	0	0	0	0	4	4
Other agents - Marine biotoxins	0	0	0	0	0	0
Other agents - Other Agents	0	0	0	0	0	0
Unknown agent	0	unknown	unknown	unknown	0	0

Table Foodborne Outbreaks: detailed data for Bacillus

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**B. cereus**

Value

FBO Code	6
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Mixed or buffet meals
More food vehicle information	indian dish with rice (chickpea, potatoes, curry sauce)
Nature of evidence	Detection of causative agent in food chain or its environment - Symptoms and onset of illness pathognomonic to causative agent
Outbreak type	General
Setting	Other setting
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Inadequate chilling;Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain: in an Indian restaurant. The affected people had picked up their take-away lunch there.

## B. cereus

Value

FBO Code	8
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Mixed or buffet meals
More food vehicle information	prepared foods from a restaurant (rice, lentil, broccoli with almond-cream sauce)
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;Inadequate chilling;Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

## B. cereus

Value

FBO Code	32
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Cereal products including rice and seeds/pulses (nuts, almonds)
More food vehicle information	Rice and indian lentils
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	Cross-contamination;Inadequate chilling;Inadequate heat treatment;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	



Table Foodborne Outbreaks: detailed data for Campylobacter

Please use CTRL for multiple selection fields

## C. jejuni

Value

FBO Code	40
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Milk
More food vehicle information	raw milk
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; in bulk tank milk. Consumption of raw milk at dairy farm and milk-residue later in the kindergarten.

## C. jejuni

Value

FBO Code	34
Number of outbreaks	1
Number of human cases	13
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Milk
More food vehicle information	raw milk
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	Household / domestic kitchen
Setting	Unknown
Place of origin of problem	Farm (primary production)
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; raw milk from bulk tank.

## C. jejuni

Value

FBO Code	29
Number of outbreaks	1
Number of human cases	14
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Milk
More food vehicle information	raw milk
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; raw milk from bulk tank.

Table Foodborne Outbreaks: detailed data for Clostridium

Please use CTRL for multiple selection fields

## C. perfringens

Value

FBO Code	33
Number of outbreaks	1
Number of human cases	21
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	smoked pork chop (Kasselerbraten)
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	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## C. perfringens

Value

FBO Code	7
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Mixed or buffet meals
More food vehicle information	Stew with vegetables and pork and beef
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	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Inadequate chilling;Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

## C. botulinum

Value

FBO Code	38
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Causative agent was found in an open package of turkey sausage and many environmental samples in the kitchen. It couldn't get figured out, if both persons ate the sausage product.
Nature of evidence	Detection of causative agent in food chain or its environment - 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	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent ( Clostridium botulinum spores) was detected in samples taken within the foodchain; in the environment of the private kitchen and in a package of sliced turkey.

Table Foodborne Outbreaks: detailed data for Escherichia coli, pathogenic

Please use CTRL for multiple selection fields

## Verotoxigenic E. coli (VTEC) - VTEC O26

Value

FBO Code	14
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Cheese
More food vehicle information	different types of cheese, predominantly raw milk cheeses, inclusive semi-hard cheese
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination; Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Listeria

Please use CTRL for multiple selection fields

## L. monocytogenes - L. monocytogenes serovar 4b

Value

FBO Code	23
Number of outbreaks	1
Number of human cases	12
Number of hospitalisations	8
Number of deaths	1
Food vehicle	Fish and fish products
More food vehicle information	Herring casserole in vegetable oil
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Processing plant
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	



Table Foodborne Outbreaks: detailed data for Other agents

Please use CTRL for multiple selection fields

## Histamine

Value

FBO Code	10
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	tuna eaten in a salad
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	Unknown
Contributory factors	Inadequate chilling;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Histamine was found in a concentration of 3062 mg/kg. The sample was taken in all probability from the eaten tuna, but not foolproof.

## Histamine

Value

FBO Code	37
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Fish and fish products
More food vehicle information	tuna
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	Household / domestic kitchen
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## Histamine

Value

FBO Code	16
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	Tuna
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	Unknown
Origin of food vehicle	Imported from outside EU
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## Histamine

Value

FBO Code	28
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Other foods
More food vehicle information	tuna pizza
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	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	The sample was taken from a tuna pizza, which was delivered to the private household. Histamine was found in a concentration of 1250 mg/kg.

Table Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

## S. Enteritidis

Value

FBO Code	31
Number of outbreaks	1
Number of human cases	26
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	raw eggs admixed in a citron dessert
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler;Other contributory factor;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain. A good outbreak research discovered eggs from private keeping as causative vehicle.

## S. Ohio

Value

FBO Code	26
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat ( <i>Gallus gallus</i> ) and products thereof
More food vehicle information	barbecue chicken drumsticks
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	Domestic market
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	Salmonella ser. Ohio 6,7: b: l, w

## S. Enteritidis - PT 4

Value

FBO Code	3
Number of outbreaks	1
Number of human cases	21
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	different meal from a communal catering ( potato salad, burger, bread, cheese, cucumber, noodles, salat, ham)
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Other
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	Place of origin of problem was in a school/kindergarten.

## S. Typhimurium, monophasic - DT 193

Value

FBO Code	41
Number of outbreaks	1
Number of human cases	24
Number of hospitalisations	6
Number of deaths	1
Food vehicle	Pig meat and products thereof
More food vehicle information	raw spiced minced pork meat
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; in the same store in two products: raw meat and spiced minced meat.



## S. Enteritidis - PT 8

Value

FBO Code	39
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	In a turkey snack stand prepared food (Döner Kebap with spicy sauce)
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Take-away or fast-food outlet
Place of origin of problem	Take-away or fast-food outlet
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination;Inadequate chilling;Other contributory factor;Storage time/temperature abuse;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; from a freezer in the preparing area.

## S. Enteritidis - PT 8

Value

FBO Code	11
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	noodle salad
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Inadequate chilling; Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

## S. Typhimurium, monophasic - DT 193

Value

FBO Code	2
Number of outbreaks	1
Number of human cases	19
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	various meals from a catering service
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
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; Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; from the same processor. Cross-contamination in the caterer's kitchen is likely.

## S. Enteritidis

Value

FBO Code	15
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Dairy products (other than cheeses)
More food vehicle information	Icecream selfmade with egg in private household
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	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## S. Enteritidis

Value

FBO Code	43
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	Bavarian cream (egg based dessert)
Nature of evidence	Descriptive epidemiological evidence
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## S. Typhimurium - DT 104

Value

FBO Code	27
Number of outbreaks	1
Number of human cases	44
Number of hospitalisations	11
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	raw pig meat and products thereof (raw minced pig meat, raw sausage called "Braunschweiger")
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination; Infected food handler; Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Products were bought at different butcher shops in two federal states. The probable link between those shops could be a meat distributor.

## S. Montevideo

Value

FBO Code	20
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Cereal products including rice and seeds/pulses (nuts, almonds)
More food vehicle information	food supplement containing contaminated hemp flour
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

## S. Enteritidis - PT 21

Value

FBO Code	21
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	cake filled with heated creme
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Other
Origin of food vehicle	Domestic market
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	Place of origin of problem was a bakery.



## S. Infantis

Value

FBO Code	13
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	raw pork products from a butchery (e.g. minced on a roll)
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; from different products of the same butchery.

## S. Enteritidis - PT 21

Value

FBO Code	42
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	Asian dish with noodles and eggs
Nature of evidence	Detection of causative agent in food chain or its environment - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Mobile retailer, market/street vendor
Place of origin of problem	Take-away or fast-food outlet
Origin of food vehicle	Domestic market
Contributory factors	Inadequate heat treatment;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; in primary production from chicken feces, Salmonella-strain persisted over three months in the same henhouse.

## S. Enteritidis - PT 8

Value

FBO Code	36
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	Tiramisu containing raw egg
Nature of evidence	Detection of causative agent in food chain or its environment - 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	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in a sample taken within the foodchain; in the restaurant.

## S. Enteritidis - PT 4

Value

FBO Code	5
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	Sauce
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Household / domestic kitchen
Place of origin of problem	Household / domestic kitchen
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination;Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

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Value

FBO Code	24
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	Stew with vegetables and pork meat
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	Domestic market
Contributory factors	Cross-contamination;Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

## S. Enteritidis - PT 4

Value

FBO Code	30
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	raw eggs admixed in a citron dessert
Nature of evidence	Detection of causative agent in food chain or its environment - 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	Domestic market
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	Causative agent was detected in samples taken within the foodchain; an egg producer.

Table Foodborne Outbreaks: detailed data for Staphylococcal enterotoxins

Please use CTRL for multiple selection fields

null

Value

FBO Code	9
Number of outbreaks	1
Number of human cases	unknown
Number of hospitalisations	unknown
Number of deaths	unknown
Food vehicle	Other or mixed red meat and products thereof
More food vehicle information	cured meat in gelatine "Tellersülze"
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	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

null

Value

FBO Code	18
Number of outbreaks	1
Number of human cases	24
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	cooked vegetables with salad cream
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	



Table Foodborne Outbreaks: detailed data for Viruses

Please use CTRL for multiple selection fields

## Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	1
Number of outbreaks	1
Number of human cases	25
Number of hospitalisations	unknown
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	various foods from buffet
Nature of evidence	Detection of causative agent in food chain or its environment - 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	Causative agent was detected in samples taken within the foodchain, from the same processor and in a stoolsample from the cook. Both samples were sequenced as Norovirus GGII.

## Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	4
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	garlic water used for brushing lángos
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	Cross-contamination;Infected food handler;Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

## Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	12
Number of outbreaks	1
Number of human cases	61
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Mixed or buffet meals
More food vehicle information	Rice and salad from a hotel buffet based on analytical study
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Restaurant, Cafe, Pub, Bar, Hotel
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	This outbreak is valuated without consensus from local human and veterinary health authorities.

## Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	22
Number of outbreaks	1
Number of human cases	41
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	cooked peeled potatoes
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	School, kindergarten
Place of origin of problem	Restaurant/Café/Pub/Bar/Hotel/Catering service
Origin of food vehicle	Domestic market
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

## Calicivirus - norovirus (Norwalk-like virus)

Value

FBO Code	35
Number of outbreaks	1
Number of human cases	40
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	mixed cooked legumes
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Aircraft, ship, train
Place of origin of problem	Unknown
Origin of food vehicle	Domestic market
Contributory factors	Cross-contamination; Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	