European Food Safety Authority

ZOONOSES MONITORING

# CZECH REPUBLIC

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

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

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

## IN 2008

# INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Czech Republic**

Reporting Year:

| Laboratory name | Description | Contribution |
|---|---|---|
| Czech Agriculture and Foot Inspection Authority (CAFIA) | Responsible for the control at wholesale and retail level of former foodstuffs including packaged meat and meet products | Sampling, laboratory testing and reporting. |
| State Veterinary Administration of the Czech Republic | Control and monitoring of animal health situation and protection of consumers from products of animal origin | Contact point for Commission in accordance with Article 3 (2) Regulation 2003/99/EC. Monitoring, data collection and reporting |
| National Institute of Public Health (NIPH) | Health promotion and protection, disease prevention and follow-up environmental impact on the health status of the population. Two department are involved to the zoonoses reporting: Department of epidemiology and microbiology and Department of food chain hygiene. | Foodborn outbreaks reporting, sampling, laborytory testing and reporting. |

# PREFACE

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

The report contains information on trends and sources of zoonoses and zoonotic agents in Czech Republic during the year 2008 .

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

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# 1. ANIMAL POPULATIONS

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

## A. Information on susceptible animal population

**Sources of information:**

Czech Statistical Office
Official statistics from Central Register of Animals in the Czech Republic which is performing in accordance with Breeding Act No. 154/2000 as amended
Data from State Veterinary Administration database

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

Numbers of animals and holdings related to 31. 12. 2008

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

The number of cattle holdings little bit decreased whereas the number of animals slightly increased. The number of sheep holdings and animals increased in year 2008. The same trends were in goats population. The number of pig holdings decreased, number of animals slightly increased. Number of Gallus gallus were appreximatelly in the same level as in 2007, but number of flocks decreased as compared with year 2007.Number of geese and ducks were going up. Number of holdings with turkeys were going up but number of turkey decreased.

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

The geographical distribution of animals and holdings on the whole territory in the Czech Republic is approximately equal.

## Table Susceptible animal populations

| | | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|---|---|---|---|---|---|---|---|---|---|
| **Animal species** | **Category of animals** | | **Year** | | **Year** | | **Year** | | **Year** |
| **Cattle (bovine animals)** | **calves (under 1 year)** | | | 10860 | | 428168 | | 15048 | |
| | **dairy cows and heifers** | | | 146421 | | 404207 | | 16008 | |
| | **in total** | | | 289998 | | 1443640 | | 21292 | |
| | **meat production animals** | | | 132294 | | 243714 | | 3270 | |
| | **mixed herds** | | | 423 | | 368051 | | 2014 | |
| **Deer** | **farmed** | | | | | 4386 | | 123 | |
| | **farmed - in total** | | | | | 4386 | | 123 | |
| **Ducks** | **breeding flocks, unspecified - in total** | 95 | | | | 4072690 | | 74 | |
| | **elite breeding flocks** | 6 | | | | 12000 | | 4 | |
| | **grandparent breeding flocks** | 6 | | | | 12000 | | 4 | |
| | **in total** | 95 | | 3096529 | | 4872690 | | 74 | |
| | **meat production flocks** | 64 | | | | 4000000 | | 52 | |
| | **parent breeding flocks** | 19 | | | | 48690 | | 14 | |
| **Gallus gallus (fowl)** | **breeding flocks for egg production line - in total** | 72 | | | | 94000 | | 13 | |

## Table Susceptible animal populations

| | | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|---|---|---|---|---|---|---|---|---|---|
| **Animal species** | **Category of animals** | | **Year** | | **Year** | | **Year** | | **Year** |
| **Gallus gallus (fowl)** | **breeding flocks for meat production line - in total** | 485 | | | | 2216094 | | 75 | |
| | **breeding flocks, unspecified - in total** | 579 | | | | 2310094 | | 88 | |
| | **broilers** [1)] | 1297 | | 130294615 | | 197000000 | | 316 | |
| | **elite breeding flocks for egg production line** | 5 | | | | 42000 | | 3 | |
| | **elite breeding flocks, unspecified - in total** | 6 | | | | 42000 | | 3 | |
| | **grandparent breeding flocks for egg production line** | 8 | | | | 52000 | | 3 | |
| | **grandparent breeding flocks for meat production line** | 0 | | | | | | | |
| | **grandparent breeding flocks, unspecified - in total** | 6 | | | | 52000 | | 3 | |
| | **in total** | 2882 | | 133770785 | | 205594000 | | 490 | |
| | **laying hens** | 449 | | 3476170 | | 6500000 | | 86 | |
| | **parent breeding flocks for egg production line** | 59 | | | | 145380 | | 7 | |
| | **parent breeding flocks for meat production line** | 485 | | | | 2216094 | | 75 | |
| | **parent breeding flocks, unspecified - in total** | 567 | | | | 2361474 | | 82 | |

## Table Susceptible animal populations

| | | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|---|---|---|---|---|---|---|---|---|---|
| Animal species | Category of animals | | Year | | Year | | Year | | Year |
| Geese | breeding flocks, unspecified - in total | 35 | | | | 234127 | | 22 | |
| | elite breeding flocks | 4 | | | | 8000 | | 1 | |
| | grandparent breeding flocks | 4 | | | | 8000 | | 1 | |
| | in total | 35 | | 3675 | | 234127 | | 22 | |
| | meat production flocks | 16 | | | | 206000 | | 11 | |
| | parent breeding flocks | 11 | | | | 12127 | | 9 | |
| Goats | animals over 1 year | | | | | 14442 | | 4699 | |
| | animals under 1 year | | | | | 9017 | | 3951 | |
| | in total | | | 691 | | 23459 | | 4751 | |
| | meat production animals | | | | | 1516 | | 1000 | |
| | milk goats | | | | | 9110 | | 951 | |
| | mixed herds | | | | | 13349 | | 2284 | |
| Pigs | breeding animals | | | 109566 | | 255000 | | 1050 | |
| | breeding animals - unspecified - sows and gilts | | | | | 244925 | | 2369 | |

## Table Susceptible animal populations

| | | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|---|---|---|---|---|---|---|---|---|---|
| **Animal species** | **Category of animals** | | **Year** | | **Year** | | **Year** | | **Year** |
| **Pigs** | **fattening pigs** | | | 3549668 | | 909000 | | 2231 | |
| | **in total** | | | 3659234 | | 2351672 | | 3546 | |
| **Quails** | **in total** | | | | | | | 5 | |
| **Sheep** | **animals over 1 year** | | | | | 140821 | | 8817 | |
| | **animals under 1 year (lambs)** | | | | | 57002 | | 8882 | |
| | **in total** | | | 14431 | | 197823 | | 8902 | |
| | **meat production animals** | | | | | 48536 | | 1775 | |
| | **milk ewes** | | | | | 1250 | | 520 | |
| | **mixed herds** | | | | | 148037 | | 6607 | |
| **Solipeds, domestic** | **horses - in total** | | | 274 | | 64126 | | 8700 | |
| **Turkeys** | **breeding flocks, unspecified - in total** | 290 | | | | 1190000 | | 130 | |
| | **in total** | 290 | | 283655 | | 1119000 | | 130 | |
| | **meat production flocks** | 280 | | | | 800000 | | 120 | |
| | **parent breeding flocks** | 10 | | | | 39000 | | 2 | |

## Table Susceptible animal populations

### Comments:

[1)] number of flocks at 31 December 2008

### Footnote:

number of breediong and laying flocks is number of flocks only in production period. Number of flocks in rearing period is excluded.

# 2. INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

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

# 2.1 SALMONELLOSIS

## 2.1.1 General evaluation of the national situation

### A. General evaluation

**History of the disease and/or infection in the country**

The monitoring and control programmes for Salmonella are carried out in the whole food chain. To this programmes are involved three institutions which are in charge for food safty and public health protection. Czech Agricultre and Food Inspection Authority and State Veterinary Administration have been established by Ministry of Agriculture and National Institute of Public Health has been establish by Ministry of Health. The Salmonellosis is notifiable disease in both in human and animal population and the obligation for notification is laied down in the legislation.

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

The Salmonellosis is very frequent reported foodborne disease. The main sources of infection in humans were products form eggs and poultry meat. However, number of reported cases in human population has decreasing tendency.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There is no relevance between finding in animals and finding in human. This cases are very rare. The main source of infection is through to foodstuffs of animal origin.

**Recent actions taken to control the zoonoses**

Based of the result of baseline study in laying hens flocks and with the aim to reduce occurence of Salmonella in laying hans flocks, the State Veterinary Administration, Ministry of Agriculture and Poultry Breeding Association prepared Salmonella control programme in breeding flocks and laying hens flocks producing table eggs. These two programmes are in force since 1. 1. 2007.

The Czech Republic participated in the survey on the prevalence of Campylobacter spp. and Salmonella spp. in broiler carcasses (BSBC) in 2008. So we insert in all data in this zoonoses monitoring.

## 2.1.2 Salmonellosis in humans

### A. Salmonellosis in humans

**Reporting system in place for the human cases**

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000.) Physicians are obliged to notify the occurence of the infection disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

**Case definition**

Clinical signs compatible with salmonellosis, e.g. diarrhoea, abdominal pain, nausea and sometimes vomiting and bacteriological investigation.

**Diagnostic/analytical methods used**

Microbiological investigation, cultivation, serotyping, phagetyping

**Notification system in place**

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000). Physicians are obliged to notify the occurence of the infection disease and send collected data by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

**History of the disease and/or infection in the country**

Incidence of salmonelloses was growing during the period from 1981 and got the plateau in late eighties. The brake was in 1989 when incidence reached three times higher levels than in previous years. The highest incidence rates were notified in 1995. Since 1998 the rates are steadily dropping down. Salmonelloses are unevenly distributed in our country. The highest rates were generally notified in agricultural districts in the east.

**Results of the investigation**

Less attention is paid to thermic processing of poultry and eggs and they became predominant risk food. Salmonella Enteritidis is the prevalent serotype (95% of all cases)in recent years.

## 2.1.3 Salmonella in foodstuffs

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

**Monitoring system**

**Sampling strategy**

**At slaughterhouse and cutting plant**

The sampling was carry out in carcasses in slaughterhouses after chilling. Monitoring take place in accordance with Directive 2003/99/EC.

**At meat processing plant**

The samples were taken in the ordinary surveilance.

**Frequency of the sampling**

**At slaughterhouse and cutting plant**

Once a month

**At meat processing plant**

Sampling distributed evenly throughout the year

**Type of specimen taken**

**At slaughterhouse and cutting plant**

Other: neck skin samples

**Methods of sampling (description of sampling techniques)**

**At slaughterhouse and cutting plant**

Fifteen neck skin samples were taken randomly from 15 carcasses of broilers after chilling. Minimal weight each of sampl was 10g.

**At meat processing plant**

The samples - meat product (final product), were placed aseptically into a sample container and transfer to the laboratory.

**Definition of positive finding**

**At slaughterhouse and cutting plant**

presence of salmonella in 25 g of sample

**At meat processing plant**

presence of salmonella in 25 g of sample

**Diagnostic/analytical methods used**

**At slaughterhouse and cutting plant**

Bacteriological method: ISO 6579:2002

#### At meat processing plant

Bacteriological method: ISO 6579:2002

### Preventive measures in place

creation and control of HACCP and GHP system

### Control program/mechanisms

#### The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed.

#### Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

In the case of positive result of the ivestigation the competent authority takes measures to prevent spreding of the infection to the food chain.

### Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in broiler meat and products is stable and situation is similar like in previous years.

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

### Monitoring system

#### Sampling strategy

**At slaughterhouse and cutting plant**

The sampling is carry out from carcasses at slaughterhouses. Samples are taken from the most consistently contaminanted sites of carcass in half way through the slaughter day and after chilling.

**At meat processing plant**

The samples were taken in the ordinary surveilance. The final products are sampled in the end of production.

#### Frequency of the sampling

**At slaughterhouse and cutting plant**

Once a month

**At meat processing plant**

Sampling distributed evenly throughout the year

#### Type of specimen taken

**At slaughterhouse and cutting plant**

Other: neck skin

**At meat processing plant**

Other: final product

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

**At slaughterhouse and cutting plant**

Neck skin samples are taken randomly from 15 carcasses of turkey after chilling.

**At meat processing plant**

the samples - one piece of final product must be placed aseptically into a sample container and transfer to the laboratory

**At retail**

#### Definition of positive finding

**At slaughterhouse and cutting plant**

presence of salmonella in 25 g of sample

**At meat processing plant**

presence of salonella in 25 g of sample

#### Diagnostic/analytical methods used

**At slaughterhouse and cutting plant**

Bacteriological method: ISO 6579:2002

#### At meat processing plant

Bacteriological method: ISO 6579:2002

### Preventive measures in place

creation and control of HACCP and GHP system

### Control program/mechanisms

#### The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for food and feed.

#### Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

In the case of positive result of the ivestigation the competent authority takes measures to prevent spreding of the infection to the food chain.

### Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA)and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in turkey meat and products is low and the situation is stable and similar like in previous years.

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

### Monitoring system

#### Sampling strategy

**At slaughterhouse and cutting plant**

The sampling was randomly and carry out on the surface of carcasses in slaughterhouses. In the region was choosen slaughterhouses in which was made sampling.The samples were taken in accordance with Directive 2003/99/EC. Samples were taken from the most consistenly contaminanted sites of carcass in half way through the slaughter day and before chilling.

**At meat processing plant**

The samples were taken in the ordinary surveilance.

**At retail**

#### Frequency of the sampling

**At slaughterhouse and cutting plant**

Once a month

**At meat processing plant**

Once a month

#### Type of specimen taken

**At slaughterhouse and cutting plant**

Surface of carcass

**At meat processing plant**

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

**At slaughterhouse and cutting plant**

Five carcasses of pigs were sampled randomly before chilling using the non-destructive method with swabs (according ISO/FDIS 1704:2003(E)). The samples were taken from four sites of carcass (mid-back, hind limb - medial, breast - lateral, abdomen - lateral). Each sample was taken from area-100cm2, first swab made with moist dossil and than with dry dossil. The alternative method was the dectructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) were taken before chilling too. Pieces of tissue were cut off a slice of 5 cm2 with maximum thickness of 5 mm with sterile instrument.
The samples were aseptically cut off and placed aseptically into a sample container and transfered to the laboratory.

**At meat processing plant**

The samples - meat products, were pleced aseptically into a samle container and transfered to the laboratory.

**At retail**

The samples - final product, had to placed aseptically into a sample container and transfered to the laboratory.

**Definition of positive finding**

**At slaughterhouse and cutting plant**

presence of salmonela in 25 g of sample

**At meat processing plant**

presence in 25 g

**Diagnostic/analytical methods used**

**At slaughterhouse and cutting plant**

Bacteriological method: ISO 6579:2002

**At meat processing plant**

Bacteriological method: ISO 6579:2002

## Preventive measures in place

Controls of HACCP, GMP and GHP systems

## Control program/mechanisms

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed.

**Recent actions taken to control the zoonoses**

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

In the case of positive result of the investigation the competent authority takes measures to prevent spreding of the infection to the food chain.

## Notification system in place

The positive result of the bacteriogical test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in pig meat and products is low and the situation is stable and similar like in previous years.

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

### Monitoring system

#### Sampling strategy

**At slaughterhouse and cutting plant**

The sampling was randomly and carry out on the surface of carcasses in slaughterhouses. In the region was choosen slaughterhouses in which was made sampling.The samples were taken in accordance with Directive 2003/99/EC. Samples were taken from the most consistenly contaminanted sites of carcass in half way through the slaughter day and before chilling

**At meat processing plant**

The samles are taken in the ordinary surveillance.

#### Frequency of the sampling

**At slaughterhouse and cutting plant**

Once a month

**At meat processing plant**

Sampling distributed evenly throughout the year

#### Type of specimen taken

**At slaughterhouse and cutting plant**

Surface of carcass

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

**At slaughterhouse and cutting plant**

Five carcasses of bovine animals were sampled randomly before chilling using the non-destructive method with swabs (according ISO/FDIS 1704:2003(E)). The samples were taken from four sites of carcass - rump, flank, brisket, neck. Each sample was taken from area-100cm2, first swab made with moist dossil and than with dry dossil. The alternative method was the dectructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) were taken before chilling too. Pieces of tissue were cut off a slice of 5 cm2 with maximum thickness of 5 mm with sterile instrument.
The samples were aseptically cut off and placed aseptically into a sample container and transfered to the laboratory.

**At meat processing plant**

The samles - meat product (final product),  were pleced aseptically into a samle container and transfered to the laboratory.

**Definition of positive finding**

**At slaughterhouse and cutting plant**

presence in 25 g

**At meat processing plant**

presence of salmonella in 25 g of sample

**Diagnostic/analytical methods used**

**At slaughterhouse and cutting plant**

Bacteriological method: ISO 6579:2002

**At meat processing plant**

Bacteriological method: ISO 6579:2002

## Preventive measures in place

creation and control of HACCAP and GHP system

## Control program/mechanisms

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

**Recent actions taken to control the zoonoses**

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

In the case of positive result of the investigation the competent authority takes measures to prevent spreding of the infection to the food chain.

## Notification system in place

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administration (RVA) and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Salmonella spp. in bovine meat and products is stable and similar like in previous years.

## E. Salmonella spp. in food - Other food - food non animal origin - at retail - official food or feed controls - random sampling

### Monitoring system

#### Sampling strategy

There is no official National program for monitoring of Salmonella spp. at retail. State Veterinary Administrtion of the Czech Republic (SVA) make the controls by whole food establishment managements in the Czech Republic.

Czech Agriculture and Food Inspection Authority (CAFIA) performed control at retail according to Commisssion Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. Samples were collected by competent authority as part of an official sampling from all 14 regions of the Czech Republic within a year by the inspectors from the Regional inspectorates and analysed in designated laboratories for analysis samples taken during official controls (Article 12, Regulation (EC) No 882/2004). The sampling by CAFIA was random. However, in case of consumer complaints was the sampling targeted.

National Institute of Public Health (NIPH) carry out monitoring of Salmonella in food at retail level in relation to protection of public health. Samples were collected from 12 regions 4 times per year by the team of worker from the Local Public Health Centers and transported to the NIPH for bacteriological examination.

#### Frequency of the sampling

The samples have been taken by CAFIA during the whole year mostly randomly.

The samples have been taken by NIPH during the whole year randomly every three months.

#### Type of specimen taken

Other: food non animal and animal origin

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

Sample of one hundred grams minimum each is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Number of subsamples (n=5) were taken in particular food categories according to a sampling - plan which is given to the Chapter 1 Food safety criteria of Commission Regulation (EC) No 2073/2005.

#### Definition of positive finding

A batch was considered to be positive where Salmonella spp. has been isolated from at least one single sample taken out of the batch.

#### Diagnostic/analytical methods used

EN ISO 6579: 2002 Microbiology of food and animal feedingstuffs - Horizontal method for the detection of Salmonella spp.

**Preventive measures in place**

According to Article 4 of Regulation (EC) No 852/2004, food business operators are to comply with microbiological criteria. This should include testing against the values set for the criteria through the taking of samples, the conduct of analysis and the implementation of corrective actions, in accordance with food law and the instructions given by the competent authority.

**Control program/mechanisms**

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed (RASFF).

**Recent actions taken to control the zoonoses**

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

In the case of positive result of investigation the whole batch is recalled from the retail and the competent authority takes measures to prevent spreding of the infection.

**Results of the investigation**

## Table Salmonella in poultry meat and products thereof

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Derby | S. Enteritidis | S. Infantis | S. Kentucky | S. Montevideo |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey** | NIPH | single | 25 g | 12 | 5 | | | 4 | | | |
| **Meat from broilers (Gallus gallus) - fresh - - neck skin - Monitoring - official sampling** | SVA | slaughter | 25 g | 1367 | 57 | 19 | 1 | 11 | 11 | 4 | 1 |
| **Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 1872 | 5 | | | | 2 | | |
| **Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey** | NIPH | single | 25 g | 12 | 1 | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 250 | 0 | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 9 | 0 | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey** | NIPH | single | 25 g | 36 | 0 | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 175 | 6 | 2 | | | 2 | | 1 |
| **Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 114 | 2 | | | | | 1 | |
| **Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey** | NIPH | single | 25 g | 12 | 1 | | | | | | |
| **Meat from duck - at slaughterhouse - Surveillance - official controls (at processing plant (not at slaughterhouses))** | SVA | batch | 25 g | 2 | 0 | | | | | | |

## Table Salmonella in poultry meat and products thereof

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Derby | S. Enteritidis | S. Infantis | S. Kentucky | S. Montevideo |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from geese - at slaughterhouse - Surveillance - official controls (at processing plant (not at slaughterhouse))** | SVA | batch | 25 g | 8 | 0 | | | | | | |
| **Meat from turkey - fresh - at slaughterhouse - Surveillance - official controls (neck skin)** | SVA | batch | 25 g | 201 | 8 | | | | | | |
| **Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 70 | 2 | | | | | | |
| **Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | | | | | | |
| **Meat from turkey - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 12 | 0 | | | | | | |
| **Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 154 | 0 | | | | | | |
| **Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 2 | 0 | | | | | | |

| | S. Newport | S. Ohio | S. Saintpaul | S. Tennessee | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|
| **Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey** | | | | | | 1 |
| **Meat from broilers (Gallus gallus) - fresh - - neck skin - Monitoring - official sampling** | 4 | 4 | | 1 | 1 | |
| **Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | 3 | | | | | |

## Table Salmonella in poultry meat and products thereof

| | S. Newport | S. Ohio | S. Saintpaul | S. Tennessee | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|
| **Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey** | | | | | | 1 |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls** | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey** | | | | | | |
| **Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | | | 1 | |
| **Meat from broilers (Gallus gallus) - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | | | 1 | | | |
| **Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey** | | | | | | 1 |
| **Meat from duck - at slaughterhouse - Surveillance - official controls (at processing plant (not at slaughterhouses))** | | | | | | |
| **Meat from geese - at slaughterhouse - Surveillance - official controls (at processing plant (not at slaughterhouse))** | | | | | | |
| **Meat from turkey - fresh - at slaughterhouse - Surveillance - official controls (neck skin)** | 8 | | | | | |
| **Meat from turkey - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | 1 | | 1 | |

## Table Salmonella in poultry meat and products thereof

| | S. Newport | S. Ohio | S. Saintpaul | S. Tennessee | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|
| Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey | | | | | | |
| Meat from turkey - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls | | | | | | |
| Meat from turkey - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls | | | | | | |
| Meat from turkey - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls | | | | | | |

## Table Salmonella in milk and dairy products

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|
| **Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - domestic production - Survey** | NIPH | single | 25 g | 24 | 0 | | | |
| **Cheeses made from cows' milk - soft and semi-soft - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 129 | 0 | | | |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 632 | 0 | | | |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Surveillance - official controls** | CAFIA/NIPH | batch | 25g | 52 | 0 | | | |
| **Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 75 | 0 | | | |
| **Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - Surveillance - official controls** | CAFIA | batch | 25g | 23 | 0 | | | |
| **Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 33 | 0 | | | |
| **Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 12 | 0 | | | |
| **Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk - at retail - Surveillance - official controls** | CAFIA | batch | 25g | 1 | 0 | | | |
| **Dairy products (excluding cheeses) - butter - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 120 | 0 | | | |
| **Dairy products (excluding cheeses) - butter - made from pasteurised milk - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | | | |

## Table Salmonella in milk and dairy products

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|
| **Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 23 | 0 | | | |
| **Dairy products (excluding cheeses) - fermented dairy products - at retail - Survey (buttermilk)** | NIPH | single | 25 g | 12 | 0 | | | |
| **Dairy products (excluding cheeses) - ice-cream - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 151 | 0 | | | |
| **Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 6652 | 0 | | | |
| **Dairy products (excluding cheeses) - milk powder and whey powder - at retail - Surveillance - official controls** | CAFIA | batch | 25g | 23 | 0 | | | |
| **Milk, cows' - pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 89 | 0 | | | |
| **Milk, cows' - raw - intended for direct human consumption - - milk - Surveillance - official controls** | SVA | batch | 25 g | 41 | 0 | | | |
| **Milk, cows' - raw milk for manufacture - intended for manufacture of pasteurised/UHT products - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 35 | 0 | | | |
| **Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 55 | 0 | | | |
| **Milk, goats' - raw - intended for direct human consumption - at farm - Surveillance - official controls** | SVA | herd | 25 g | 11 | 0 | | | |

## Table Salmonella in red meat and products thereof

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Derby | S. Enteritidis | S. Heidelberg | S. Infantis | S. London |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling (carcass swabs)** | SVA | batch | 100 cm2 | 4505 | 9 | | 1 | 2 | | | 1 |
| **Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 1523 | 2 | | 1 | | | | |
| **Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 641 | 0 | | | | | | |
| **Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 121 | 0 | | | | | | |
| **Meat from bovine animals - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 23 | 0 | | | | | | |
| **Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 45 | 1 | | | | | | |
| **Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling (carcass swabs)** | SVA | batch | 100 xm2 | 5625 | 32 | 7 | 7 | | 1 | 4 | 2 |
| **Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 4532 | 14 | | 7 | 1 | | | |
| **Meat from pig - meat products - cooked, ready-to -eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 1954 | 3 | | | 3 | | | |
| **Meat from pig - meat products - cooked, ready-to -eat - at retail - Survey** | NIPH | single | 25 g | 60 | 0 | | | | | | |
| **Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 420 | 3 | | 1 | | | | |

## Table Salmonella in red meat and products thereof

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Derby | S. Enteritidis | S. Heidelberg | S. Infantis | S. London |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from pig - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 120 | 0 | | | | | | |
| **Meat from pig - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 2732 | 5 | 1 | 2 | | | 1 | |
| **Meat, mixed meat - at processing plant - Surveillance (minced meat)** | SVA | batch | 25 g | 421 | 3 | | | | | 1 | |
| **Meat, mixed meat - at processing plant - Surveillance - official controls (intended to be eaten coked)** | SVA | batch | 25 g | 3203 | 5 | 1 | | | | 2 | |

| | S. Menston | S. Rissen | S. Typhimurium | Salmonella spp. | Salmonella spp., unspecified | S. enterica subsp. enterica | S. enterica subsp. salamae |
|---|---|---|---|---|---|---|---|
| **Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling (carcass swabs)** | | | 2 | | | 3 | |
| **Meat from bovine animals - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | 1 | | | | |
| **Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | | | | | | | |
| **Meat from bovine animals - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | | | | | |
| **Meat from bovine animals - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | | | | | | | |

## Table Salmonella in red meat and products thereof

| | S. Menston | S. Rissen | S. Typhimurium | Salmonella spp. | Salmonella spp., unspecified | S. enterica subsp. enterica | S. enterica subsp. salamae |
|---|---|---|---|---|---|---|---|
| **Meat from bovine animals - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | | 1 | | | |
| **Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling (carcass swabs)** | | | 2 | | | 9 | |
| **Meat from pig - meat preparation - intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | 4 | | | 2 | |
| **Meat from pig - meat products - cooked, ready-to -eat - at processing plant - Surveillance - official controls** | | | | | | | |
| **Meat from pig - meat products - cooked, ready-to -eat - at retail - Survey** | | | | | | | |
| **Meat from pig - meat products - raw but intended to be eaten cooked - at processing plant - Surveillance - official controls** | 1 | 1 | | | | | |
| **Meat from pig - mechanically separated meat (MSM) - at processing plant - Surveillance - official controls** | | | | | | | |
| **Meat from pig - minced meat - intended to be eaten cooked - at processing plant - Surveillance - official controls** | | | 1 | | | | |
| **Meat, mixed meat - at processing plant - Surveillance (minced meat)** | | | 1 | | | 1 | |
| **Meat, mixed meat - at processing plant - Surveillance - official controls (intended to be eaten coked)** | | | 1 | | | | 1 |

## Table Salmonella in other food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Enteritidis | S. Infantis | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crustaceans - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 35 | 0 | | | | | |
| **Egg products - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 628 | 7 | 1 | 6 | | | |
| **Egg products - at retail - Survey (mayonnaise)** | NIPH | single | 25 g | 12 | 0 | | | | | |
| **Eggs - raw material (liquid egg) for egg products - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 210 | 1 | | 1 | | | |
| **Eggs - table eggs - at packing centre - Surveillance - official controls** | SVA | batch | 25 g | 451 | 2 | | 1 | 1 | | |
| **Eggs - table eggs - at retail - Survey** | NIPH | single | 25 g | 24 | 0 | | | | | |
| **Fish - at retail - Survey** | NIPH | single | 25 g | 24 | 1 | | 1 | | | |
| **Fish - smoked - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | | | | | |
| **Fishery products, unspecified - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | | | | | |
| **Fruits - at retail - Survey** | NIPH | single | 25 g | 23 | 0 | | | | | |
| **Fruits and vegetables - precut - at processing plant - Surveillance - official controls** | SVA/CAFIA | batch | 25 g | 233 | 0 | | | | | |
| **Fruits and vegetables - precut - ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 20 | 0 | | | | | |
| **Fruits and vegetables - precut - ready-to-eat - at retail - Survey** | NIPH | single | 25 g | 84 | 0 | | | | | |
| **Infant formula - dried - intended for infants below 6 months - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 44 | 0 | | | | | |
| **Meat from pig - offal - Frozen vegetables - at retail - Survey** | NIPH | single | 25 g | 36 | 0 | | | | | |

## Table Salmonella in other food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Enteritidis | S. Infantis | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from pig - offal - chilled - at retail - domestic production - Survey (pork liver)** | NIPH | single | 25 g | 12 | 1 | | | | 1 | |
| **Meat from rabbit - fresh - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | | | | | |
| **Meat, mixed meat - meat products - cooked, ready-to-eat - chilled - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 58 | 0 | | | | | |
| **Meat, mixed meat - meat products - cooked, ready-to-eat - chilled - at retail - Survey** | NIPH | single | 25 g | 84 | 1 | | 1 | | | |
| **Meat, mixed meat - meat products - fermented sausages - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 16 | 0 | | | | | |
| **Meat, mixed meat - meat products - fermented sausages - at retail - Survey** | NIPH | single | 25 g | 24 | 0 | | | | | |
| **Meat, red meat (meat from bovines, pigs, goats, sheep, horses, donkeys, bison and water buffalos) - minced meat - at retail - Survey (pork (50%) + beef (50%))** | NIPH | single | 25 g | 12 | 0 | | | | | |
| **Molluscan shellfish - cooked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 10 | 0 | | | | | |
| **Molluscan shellfish - raw - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 1 | 0 | | | | | |
| **Ready-to-eat salads - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 22 | 0 | | | | | |
| **Ready-to-eat salads - at retail - Survey** | NIPH | single | 25 g | 24 | 0 | | | | | |
| **Ready-to-eat salads - containing mayonnaise - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 74 | 0 | | | | | |
| **Sauce and dressings - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 5 | 0 | | | | | |
| **Sweets - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 58 | 0 | | | | | |

## Table Salmonella in other food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Enteritidis | S. Infantis | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sweets - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 400 | 0 | | | | | |
| **Sweets - at retail - Survey** | NIPH | single | 25 g | 36 | 0 | | | | | |

## 2.1.4 Salmonella in animals

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

**Vaccination policy**

**Breeding flocks**

Vaccination is voluntary and usually not performed.

**Meat production flocks**

Vaccination is voluntary and usually not performed.

## B. Salmonella spp. in bovine animals

### Vaccination policy

Vaccination is voluntary and usually not performed.

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

### Monitoring system

#### Sampling strategy

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

The sampling strategy was in accordance Regulation (EC) No. 2160/2003 of the European Parliament and the Concil and Commission Regulation (EC) 1003/2005. The sampling strategy was in accordance with Council Directive 92/117/EEC Regulation (EC) No. 2160/2003 of 17 December 1992 concerning measures for protection against specified zoonoses the European Parliament and specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of food-borne infections the Concil and intoxications (OJ L 62, 15.3.1993, p. 38). Commission Regulation (EC) 1003/2005.

#### Frequency of the sampling

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

Every flock is sampled

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

4 weeks

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

2 weeks

#### Type of specimen taken

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

Internal linings of delivery boxes

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

Faeces

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

Faeces

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

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

At day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well.

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

Pooled samples from faces with regard on the number of birds in the building. 250 - 349 birds 200 samples, 350 - 449 birds 220 samples, 450 - 799 birds 250 samples, 800 - 999 birds 260 samples, 1000 and more birds 300 samples.

**Breeding flocks: Production period**

Pooled samples from faces with regard on the number of birds in the building. 250 - 349 birds 200 samples, 350 - 449 birds 220 samples, 450 - 799 birds 250

samples, 800 - 999 birds 260 samples, 1000 and more birds 300 samples.

**Case definition**

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

In the case of detection of Salmonella enteritidis, typhimurium, hadar, wirchov, infantis in swabs, the official veterinarian from the relevant RVA shall carry out official sampling for confirmation of the first results. The NRL shall apply a confirmation method based on bacteriological examination of organs. Poultry for the examination must be selected form each flock on a random basis â€“ at least 5 birds from different places in the hall. Birds showing alteration of state of health shall be selected in particular. Samples of liver, ovary and intestines of each bird must be taken and examined for the presence of Salmonella spp. at the laboratory.
Pending the completion of the confirmatory examination, the relevant RVA shall order at least the following measures:
a) performance of bacteriological examination of feed and water for the presence of Salmonella spp.;
b) performance of thorough cleansing and disinfection, both in the hall and in other service premises (e.g. feed and litter stores); performance of thorough mechanical cleansing and disinfection, as well as safe removal off faeces and litter after completion of each production cycle.

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

In the case of detection of Salmonella enteritidis, typhimurium, Virchow, Hadar, Infantis in faeces, the official veterinarian from the relevant RVA shall carry out official sampling for confirmation of the first results. The NRL shall apply a confirmation method based on bacteriological examination of organs. Poultry for the examination must be selected form each flock on a random basis â€“ at least 5 birds from different places in the hall. Birds showing alteration of state of health shall be selected in particular. Samples of liver, ovary and intestines of each bird must be taken and examined for the presence of Salmonella spp. at the laboratory.
Pending the completion of the confirmatory examination, the relevant RVA shall order at least the following measures:
a) performance of bacteriological examination of feed and water for the presence of Salmonella spp.;
b) performance of thorough cleansing and disinfection, both in the hall and in other service premises (e.g. feed and litter stores); performance of thorough mechanical cleansing and disinfection, as well as safe removal of faeces and litter after completion of each production cycle.

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

Where the result of monitoring detected presence of Salmonella enteritidis, Salmonella typhimurium, Salmonella infantis, Salmonella virchow and

Salmonella hadar in a breeding flock, confirmation of the result was performed. The person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the flock shall notify the results to the competent authority.
The competent authority performed officially sampling in order to confirm the initial results. A sample of birds must be taken at
random from within each house of birds on the farm. For the
purposes of examination, the birds from each house must be grouped into batches of five and samples of liver, ovary and intestines taken from each bird in the batch must be examined for Salmonella.

**Diagnostic/analytical methods used**

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

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

Bacteriological method: ISO 6579:2002

## Vaccination policy

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

Vaccination is mandatory against Salmonella enteritidis sinece 1st January 2007. Before 1st January 2007 the vaccination was carry out on voluntary basis. Vaccination is voluntary and most of the breeding flocks were in the year 2006 vaccinated mandatory against S. enteritidis. Salmonella enteritidis since 1st January 2007. Before 1st January 2007 the vaccination was carry out on voluntary basis.

## Control program/mechanisms

**The control program/strategies in place**

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

Aim of the programme is to monitor, on the basis of sampling in all poultry flocks, occurrence of invasive serotypes of S. enteritidis, S. typhimurium, S. infantis, S. virchow and S. hadar, and to take measures aimed in particular at the protection of public health, as well as health of other poultry populations. To ensure the reduction of percentage of positive breeding poultry flocks to 1% within the period of 3 years. The entire territory of the Czech Republic and all registered poultry holdings are included in the monitoring.

Official checks at the level of poultry flocks are organized and carried out by the relevant Regional Veterinary Administrations (RVA), which also take measures in the case of positive results.

Sampling in poultry flocks is carried out by farmers or private veterinarians. Official confirmation samples are taken and sent to the laboratory examination by official veterinarians from the relevant RVA.

Samples, the examination of which is paid from the state budget, are always taken by the official veterinarian from the relevant RVA.

Legal basis of the programme
The programme has been approved by the Commision.
Legal basis of the programme represent the following pieces of legislation:

a) Regulation (EC) No. 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents, on the basis of which must Member States draw up national programmes for control of salmonellae.
b) Commission Regulation (EC) No. 1003/2005 of 30 June 2005 implementing Regulation (EC) No. 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of Gallus gallus and amending Regulation (EC) No 2160/2003.
c) Act No. 166/1999 concerning veterinary care and amending certain related laws (Veterinary Act), as amended (hereinafter referred to as the â€œVeterinary Actâ€).
d) Decree of the Ministry of Agriculture No. 356/2004 concerning monitoring of zoonoses and zoonotic agents and amending Decree No. 299/2003 concerning measures for prevention and eradication of contagious diseases and diseases communicable from animals to man.

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

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

Measures to be taken in breeding poultry flocks (Gallus gallus) where the infection has been confirmed by examination of an official sample

a) Performance of epidemiological inquiry in the holding, aimed at detection of source of the infection and, where appropriate, bacteriological examination of feed and water.
b) Use of antibiotics for treatment of positively confirmed cases in breeding poultry flocks shall be prohibited. Antibiotics may be used in accordance with Commission Regulation (EC) No. 1091/2005 only.
c) All poultry in the positive flock, confirmed by bacteriological examination of confirmatory samples including one-day chicks, must be slaughtered or destroyed so as to reduce as much as possible the risk of spreading salmonella. Slaughtering must be carried out in accordance with the legislation on food hygiene. By-products not intended for human consumption must be disposed of

in accordance with Regulation (EC) No. 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption.
d) Non-incubated hatching eggs must be destroyed.
e) Where hatching eggs are still present in a hatchery, they must be destroyed or treated in accordance with Regulation (EC) No. 1774/2002 of the European Parliament and of the Council.
f) A thorough cleansing and disinfection must be carried out after slaughtering or destruction of poultry from infected flocks, including safe disposal of droppings or litter, in accordance with the relevant RVA instructions.

**Notification system in place**

Notification system is lay down by the Act No. 166/1999 of 13 July 1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

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

### Monitoring system

#### Sampling strategy

**Laying hens flocks**

The sampling strategy was in accordance Regulation (EC) No. 2160/2003 of the European Parliament and the Concil.

From 1 st January 2007 National Control Programme was started. The aim of the National Control Programme for Salmonella Infections in Laying Hens (Gallus gallus) producing table eggs is reduction of the prevalence of Salmonella enteritidis (SE) and Salmonella typhimurium (ST) in laying hens flocks and to ensure that adequate and effective measures for monitoring and control of salmonella infections are taken in laying flocks. The reduction of the prevalence of the Salmonella in laying hens flocks is focused on achievement of the targets laying down in Commission Regulation (EC) No. 1168/2006. The National control programme was imposed one year earliear than is set up in EU legislation.

#### Frequency of the sampling

**Laying hens: Day-old chicks**

Every flock is sampled

**Laying hens: Rearing period**

2 weeks prior to moving

**Laying hens: Production period**

15 weeks

#### Type of specimen taken

**Laying hens: Day-old chicks**

Internal linings of delivery boxes

**Laying hens: Rearing period**

Faeces

**Laying hens: Production period**

Faeces

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

**Laying hens: Day-old chicks**

At one day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well. At one day-old chicks after transport are taken samples from internal wall of transport boxes, 10 swabs from each delivery. All fallen chicks (max. 60) were tested as well.

**Laying hens: Production period**

Pooled samples from faces with regard
Sampling by operators:
a) every 15 weeks;
b) initial sampling â€“ at the age of 24 Â± 2 weeks.

Official sampling
a) in one flock once per year; or
b) at the age of 24 Â± 2 weeks in laying flocks housed in buildings where salmonella was detected in the preceding flock; or
c) in any case of suspicion on Salmonella enteritidis or Salmonella typhimurium infection, as a result of the number epidemiological investigation of birds food-borne outbreaks, in accordance with Article 8 of Directive 2003/99/EC European Parliament and of the Council;
d) in all other laying flocks on the holding in case Salmonella enteritidis or Salmonella typhimurium are detected in one laying flock on the holding;
e) in cases where the regional veterinary administration considers it appropriate.

**Case definition**

**Laying hens: Day-old chicks**

In the case of detection of Salmonella enteritidis and/or typhimurium in swabs, the official veterinarian from the relevant RVA shall carry out official sampling for confirmation of the first results. The NRL shall apply a confirmation method based on bacteriological examination of organs. Poultry for the examination must be selected form each flock on a random basis â€“ at least 5 birds from different places in the hall. Birds showing alteration of state of health shall be selected in particular. Samples of liver, ovary and intestines of each bird must be taken and examined for the presence of Salmonella spp. at the laboratory.
Pending the completion of the confirmatory examination, the relevant RVA shall order at least the following measures:
a) performance of bacteriological examination of feed and water for the presence of Salmonella spp.;
b) performance of thorough cleansing and disinfection, both in the hall and in other service premises (e.g. feed and litter stores); performance of thorough mechanical cleansing and disinfection, as well as safe removal of faeces and litter after completion of each production cycle.

**Laying hens: Rearing period**

In the case of detection of Salmonella enteritidis and Salmonella typhimurium in faeces and/or dust samples, the official veterinarian from the relevant RVA shall

carry out official sampling for confirmation of the first results. The NRL shall apply a confirmation method based on bacteriological examination of organs. Poultry for the examination must be selected form each flock on a random basis â€“ at least 5 birds from different places in the hall. Birds showing alteration of state of health shall be selected in particular. Samples of liver, ovary and intestines of each bird must be taken and examined for the presence of Salmonella spp. at the laboratory.
Pending the completion of the confirmatory examination, the relevant RVA shall order at least the following measures:
a) performance of bacteriological examination of feed and water for the presence of Salmonella spp.;
b) performance of thorough cleansing and disinfection, both in the hall and in other service premises (e.g. feed and litter stores); performance of thorough mechanical cleansing and disinfection, as well as safe removal of faeces and litter after completion of each production cycle.

**Laying hens: Production period**

In the case of detection of Salmonella enteritidis and Salmonella typhimurium in faeces and/or dust samples, the official veterinarian from the relevant RVA shall carry out official sampling for confirmation of the first results. The NRL shall apply a confirmation method based on bacteriological examination of organs. Poultry for the examination must be selected form each flock on a random basis â€“ at least 5 birds from different places in the hall. Birds showing alteration of state of health shall be selected in particular. Samples of liver, ovary and intestines of each bird must be taken and examined for the presence of Salmonella spp. at the laboratory.
Pending the completion of the confirmatory examination, the relevant RVA shall order at least the following measures:
a) performance of bacteriological examination of feed and water for the presence of Salmonella spp.;
b) performance of thorough cleansing and disinfection, both in the hall and in other service premises (e.g. feed and litter stores); performance of thorough mechanical cleansing and disinfection, as well as safe removal of faeces and litter after completion of each production cycle.

**Diagnostic/analytical methods used**

**Laying hens: Day-old chicks**

Bacteriological method: ISO 6579:2002

**Laying hens: Rearing period**

Bacteriological method: ISO 6579:2002

**Laying hens: Production period**

Bacteriological method: ISO 6579:2002

## Vaccination policy

### Laying hens flocks

Vaccination against Salmonella enteritidis in laying hens flocks producing table eggs is mandatory since 1st January 2007. Vaccination against Salmonella enteritidis in laying hens flocks producing table eggs was voluntary and most of the flocks of laying hens have not been vaccinated against any serotype of Salmonella spp. is mandatory since 1st January 2007.

## Control program/mechanisms

### The control program/strategies in place

#### Laying hens flocks

The aim of the National Control Programme for Salmonella Infections in Laying Hens (Gallus gallus) producing table eggs, to be applied from the year 2008 (hereinafter referred to as the “National Programme”) is reduction of the prevalence of Salmonella enteritidis (SE) and Salmonella typhimurium (ST) in laying hens flocks and to ensure that adequate and effective measures for monitoring and control of salmonella infections are taken in laying flocks. The reduction of the prevalence of the Salmonella in laying hens flocks will be focused on achievement of the targets laying down in Commission Regulation (EC) No. 1168/2006.
The central authority competent for supervising and coordinating all activities in veterinary care is the State Veterinary Administration, which performs its powers at the whole territory of the Czech Republic (Â§ 47, Veterinary Act No 166/1999 Col. of Acts). SVA of the CR coordinates the activities of Regional Veterinary Administrations and lay down Methodology for Animal Health Control.
Legal basis
a) Regulation (EC) No. 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents;
b) Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry;
c) Commission Regulation (EC) No 1168/2006 of 31 July 2006 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of Gallus Gallus and amending Regulation (EC) No 1003/2005;
d) Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs;
e) Commission Regulation (EC) No 1091/2005 of 12 July 2005 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as

regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella;
f) Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs;
g) Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC;
h) Act No. 166/1999 concerning veterinary care and amending certain related laws, as amended (Veterinary Act);
i) Act No. 154/2000 concerning pedigree breeding, breeding and registration of farm animals and amending certain related laws, as amended (Breeding Act);
j) Act No. 146/2002 concerning the Czech Agriculture and Food Inspection Authority and amending certain related laws, as amended;
k) Act No. 20/1966 concerning public health care, as amended;
l) Decree No. 356/2004 concerning the monitoring of zoonoses and zoonotic agents and amending Decree No. 299/2003 concerning measures for prevention and eradication of contagious diseases and diseases communicable from animals to man;
m) DeNo. 296/2003 concerning animal health and its protection, animal movement and transportation and authorization and professional qualification for performance of certain professional veterinary activities;
Decree No. 136/2004 laying down details for identification of animals and their registration and registration of holdings and person designated by Breeding Act.

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

**Laying hens flocks**

In the case of positive result of the confirmatory examination, the flock in question shall be considered infected. Safe disposal of poultry showing clinical signs shall be performed; in other poultry targeted effective treatment, including use of probiotics or acidification of water and feeds, shall be applied.
The RVA shall carry out an epidemiological investigation in the flock, aimed at the detection of source of the infection and shall order at least the following:
a) performance of further bacteriological examination of feed and water for the presence of Salmonella spp., if necessary;
b) table eggs coming from infected flocks may be used for human consumption only after their in a way ensuring that they are completely free of all salmonella serotypes of public health relevance, in accordance with food hygiene legislation;
c) antibiotics may be used for treatment only based on results of bacteriological examination and after performance of anti-microbial susceptibility test (i.e. test on efficacy of antibiotics against pathogens detected); withdrawal periods and provisions of this programme concerning use of antimicrobials must be observed in such case;
d) thorough cleansing and disinfection, including safe removal of faeces or litter must be performed after slaughtering or killing of poultry from infected flocks; the

slaughtering must be performed in accordance with food hygiene legislation. By-products coming from such birds may be placed on the market for human consumption in accordance with the relevant legislation. If such products are not intended for human consumption, they must be used or disposed of in accordance with Regulation (EC) No. 1774/2002.

**Notification system in place**

Notification system is lay down by the Act No. 166/1999 of 13 July 1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

## Table Salmonella in breeding flocks of Gallus gallus

| | Number of existing flocks | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Hadar | S. Havana | S. Infantis | S. Montevideo | S. Newport |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gallus gallus (fowl) - breeding flocks for egg production line - during production period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling** [1)] | 72 | NRL for | flock | 2 | 2 | 2 | | | | | |
| **Gallus gallus (fowl) - breeding flocks for egg production line - during rearing period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling** [2)] | 15 | NRL for | flock | 6 | 1 | 1 | | | | | |
| **Gallus gallus (fowl) - breeding flocks for meat production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** [3)] | 1 | NRL for | flock | 1 | 0 | | | | | | |
| **Gallus gallus (fowl) - elite breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 4 | NRL for | flock | 4 | 0 | | | | | | |
| **Gallus gallus (fowl) - elite breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 5 | NRL for | flock | 5 | 0 | | | | | | |
| **Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 4 | NRL for | flock | 4 | 2 | 2 | | | | | |
| **Gallus gallus (fowl) - grandparent breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 0 | NRL for | flock | 0 | 0 | | | | | | |

## Table Salmonella in breeding flocks of Gallus gallus

| | Number of existing flocks | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Hadar | S. Havana | S. Infantis | S. Montevideo | S. Newport |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 8 | NRL | flock | 8 | 2 | 2 | | | | | |
| **Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 0 | NRL | flock | 0 | 0 | | | | | | |
| **Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 6 | NRL | flock | 6 | 0 | | | | | | |
| **Gallus gallus (fowl) - parent breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 59 | NRL | flock | 59 | 0 | | | | | | |
| **Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling** | 11 | NRL | flock | 11 | 3 | 3 | | | | | |
| **Gallus gallus (fowl) - parent breeding flocks for meat production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 88 | NRL for | flock | 88 | 1 | | | | | | |
| **Gallus gallus (fowl) - parent breeding flocks for meat production line - during production period - - faeces - Control and eradication programmes - official and industry sampling - objective sampling** | 485 | NRL for | flock | 485 | 8 | 4 | | | | 1 | 3 |

## Table Salmonella in breeding flocks of Gallus gallus

| | Number of existing flocks | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Hadar | S. Havana | S. Infantis | S. Montevideo | S. Newport |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gallus gallus (fowl) - parent breeding flocks for meat production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling | 476 | NRL for | flock | 476 | 12 | 1 | | 1 | 1 | 9 | |

| | S. Typhimurium | S. Virchow | Salmonella spp., unspecified |
|---|---|---|---|
| Gallus gallus (fowl) - breeding flocks for egg production line - during production period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling [1)] | | | |
| Gallus gallus (fowl) - breeding flocks for egg production line - during rearing period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling [2)] | | | |
| Gallus gallus (fowl) - breeding flocks for meat production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling [3)] | | | |
| Gallus gallus (fowl) - elite breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling | | | |
| Gallus gallus (fowl) - elite breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |

## Table Salmonella in breeding flocks of Gallus gallus

| | S. Typhimurium | S. Virchow | Salmonella spp., unspecified |
|---|---|---|---|
| Gallus gallus (fowl) - elite breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |
| Gallus gallus (fowl) - grandparent breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling | | | |
| Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |
| Gallus gallus (fowl) - grandparent breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |
| Gallus gallus (fowl) - parent breeding flocks for egg production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling | | | |
| Gallus gallus (fowl) - parent breeding flocks for egg production line - during production period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |
| Gallus gallus (fowl) - parent breeding flocks for egg production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling | | | |

## Table Salmonella in breeding flocks of Gallus gallus

| | S. Typhimurium | S. Virchow | Salmonella spp., unspecified |
|---|---|---|---|
| **Gallus gallus (fowl) - parent breeding flocks for meat production line - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 1 | | |
| **Gallus gallus (fowl) - parent breeding flocks for meat production line - during production period - - faeces - Control and eradication programmes - official and industry sampling - objective sampling** | | | |
| **Gallus gallus (fowl) - parent breeding flocks for meat production line - during rearing period - - faeces - Control and eradication programmes - official sampling - objective sampling** | | | |

## Comments:

[1)] confirmatory testing
[2)] confirmatory testing
[3)] grandparent for meat production line

## Table Salmonella in other poultry

| | Number of existing flocks | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Braenderup | S. Chester | S. Enteritidis | S. Havana | S. Indiana |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ducks - meat production flocks - - organ/tissue - Clinical investigations** | | NRL for | animal | 121 | 0 | | | | | | |
| **Gallus gallus (fowl) - broilers - during rearing period - - faeces - Control and eradication programmes - industry sampling - census sampling** | 253 | NRL for | flock | 253 | 24 | | 1 | | 18 | | |
| **Gallus gallus (fowl) - laying hens - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling** | 137 | NRL for | flock | 137 | 3 | 1 | | | 1 | | |
| **Gallus gallus (fowl) - laying hens - during production period - - faeces - Control and eradication programmes - official and industry sampling** | 449 | NRL for | flock | 449 | 40 | 4 | | | 34 | | |
| **Gallus gallus (fowl) - laying hens - during production period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling** [1)] | 449 | NRL for | animal | 34 | 3 | | | | 3 | | |
| **Gallus gallus (fowl) - laying hens - during production period - at farm - environmental sample - Control and eradication programmes - industry sampling - census sampling** | 449 | NRL for | flock | 449 | 14 | 4 | | | 10 | | |
| **Gallus gallus (fowl) - laying hens - during production period - at farm - environmental sample - Control and eradication programmes - official sampling - objective sampling** | 449 | NRL for | flock | 449 | 26 | | | | 24 | | |
| **Gallus gallus (fowl) - laying hens - during rearing period - - faeces - Control and eradication programmes - industry sampling - census sampling** | 263 | NRL for | flock | 263 | 3 | | | | 3 | | |
| **Gallus gallus (fowl) - laying hens - during rearing period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling** [2)] | 263 | NRL for | animal | 3 | 3 | | | | | | |

## Table Salmonella in other poultry

| | Number of existing flocks | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Agona | S. Braenderup | S. Chester | S. Enteritidis | S. Havana | S. Indiana |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gallus gallus (fowl) - unspecified - day-old chicks - - organ/tissue - Clinical investigations | | NRL for | animal | 231 | 11 | | | | 9 | | |
| Gallus gallus (fowl) - unspecified - during production period - - faeces - Clinical investigations | | NRL for | animal | 251 | 10 | | | | 7 | | 1 |
| Turkeys - meat production flocks - - organ/tissue - Clinical investigations | | NRL for | animal | 291 | 10 | | | 2 | | | |

| | S. Infantis | S. Montevideo | S. Newport | S. Ohio | S. Saintpaul | S. Tennessee | S. Typhimurium | S. Zanzibar | S. II 6,7:m,t:- | Salmonella spp., unspecified | S. enterica subsp. enterica, rough |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ducks - meat production flocks - - organ/tissue - Clinical investigations | | | | | | | | | | | |
| Gallus gallus (fowl) - broilers - during rearing period - - faeces - Control and eradication programmes - industry sampling - census sampling | 2 | | | 1 | | | | | | | 2 |
| Gallus gallus (fowl) - laying hens - day-old chicks - - organ/tissue - Control and eradication programmes - industry sampling - census sampling | | | | | | | 1 | | | | |
| Gallus gallus (fowl) - laying hens - during production period - - faeces - Control and eradication programmes - official and industry sampling | | 1 | | | | | | | 1 | | |
| Gallus gallus (fowl) - laying hens - during production period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling [1)] | | | | | | | | | | | |

## Table Salmonella in other poultry

| | S. Infantis | S. Montevideo | S. Newport | S. Ohio | S. Saintpaul | S. Tennessee | S. Typhimurium | S. Zanzibar | S. II 6,7:m,t:- | Salmonella spp., unspecified | S. enterica subsp. enterica, rough |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gallus gallus (fowl) - laying hens - during production period - at farm - environmental sample - Control and eradication programmes - industry sampling - census sampling | | | | | | | | | | | |
| Gallus gallus (fowl) - laying hens - during production period - at farm - environmental sample - Control and eradication programmes - official sampling - objective sampling | | 1 | | | | | | | 1 | | |
| Gallus gallus (fowl) - laying hens - during rearing period - - faeces - Control and eradication programmes - industry sampling - census sampling | | | | | | | | | | | |
| Gallus gallus (fowl) - laying hens - during rearing period - - organ/tissue - Control and eradication programmes - official sampling - suspect sampling [2)] | | | | | | | | | | | |
| Gallus gallus (fowl) - unspecified - day-old chicks - - organ/tissue - Clinical investigations | 1 | | | | | 1 | | | | | |
| Gallus gallus (fowl) - unspecified - during production period - - faeces - Clinical investigations | | | | | | | 1 | | | | 1 |
| Turkeys - meat production flocks - - organ/tissue - Clinical investigations | | | 5 | | 1 | | | 2 | | | |

## Comments:

[1)] confirmatory testing
[2)] confirmatory testing

## Footnote:

Gallus gallus-broilers:number of broilers flocks tested in December 2008 in the frame of control programme applied since 1.1.2009.

## Table Salmonella in other birds

| | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Indiana | S. Typhimurium | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|
| **Ostriches - - organ/tissue - Clinical investigations** | NRL for | animal | 52 | 0 | | | | |
| **Partridges - - organ/tissue - Clinical investigations** | NRL for | animal | | | | | | |
| **Pheasants - - organ/tissue - Clinical investigations** | NRL for | animal | 18 | 1 | | 1 | | |
| **Pigeons - - organ/tissue - Clinical investigations** | NRL for | animal | 78 | 2 | | | 2 | |
| **Quails - - organ/tissue - Clinical investigations** | NRL for | animal | 111 | 0 | | | | |

## Table Salmonella in other animals

| | Source of information | Sampling unit | Units tested | Total units positive for Salmonella spp. | S. Derby | S. Enteritidis | S. Infantis | S. Orion | S. Typhimurium | S. 4,12:i:- | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cattle (bovine animals)** | NRL for | animal | 862 | 18 | | 2 | 1 | 1 | 14 | | |
| **Cattle (bovine animals) - adult cattle over 2 years - - organ/tissue - Clinical investigations** | NRL for | animal | 223 | 3 | | | | | 3 | | |
| **Cattle (bovine animals) - calves (under 1 year) - - organ/tissue - Clinical investigations** | NRL for | animal | 511 | 14 | | 1 | 1 | 1 | 11 | | |
| **Cattle (bovine animals) - heifers - - organ/tissue - Clinical investigations** | NRL for | animal | 128 | 1 | | 1 | | | | | |
| **Goats - - organ/tissue - Clinical investigations** [1)] | NRL for | animal | 18 | 1 | | 1 | | | | | |
| **Pigs - breeding animals - - organ/tissue - Clinical investigations** | NRL for | animal | 373 | 5 | | | | | 2 | 3 | |
| **Pigs - fattening pigs - - organ/tissue - Clinical investigations** | NRL for | animal | 854 | 22 | 1 | 3 | | | 9 | 9 | |
| **Sheep - - organ/tissue - Clinical investigations** [2)] | NRL for | animal | 12 | 1 | | | | | 1 | | |
| **Solipeds, domestic - - organ/tissue - Clinical investigations** | NRL for | animal | 112 | 0 | | | | | | | |

## Comments:

[1)] adult goats over 2 years
[2)] lambs(under 1 year)

## Footnote:

We confirm that in row "Cattle(bovine animals)"is summary of the data in rows "adult cattle","calves"and "heifers".

## 2.1.5 Salmonella in feedingstuffs

### Table Salmonella in feed material of animal origin

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Infantis | S. Isangi | S. Muenster | S. Ohio | S. Saintpaul |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Feed material of land animal origin - animal fat - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 65 | 0 | | | | | | |
| **Feed material of land animal origin - blood meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 74 | 1 | | | 1 | | | |
| **Feed material of land animal origin - bone meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 184 | 0 | | | | | | |
| **Feed material of land animal origin - feather meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 114 | 0 | | | | | | |
| **Feed material of land animal origin - meat and bone meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 756 | 0 | | | | | | |
| **Feed material of land animal origin - meat meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 421 | 0 | | | | | | |
| **Feed material of land animal origin - poultry offal meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 224 | 1 | | 1 | | | | |
| **Feed material of marine animal origin - fish meal - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 78 | 4 | | | | 1 | 1 | 1 |

| | S. Typhimurium | Salmonella spp., unspecified | S. enterica subsp. enterica |
|---|---|---|---|
| **Feed material of land animal origin - animal fat - at feed mill - Surveillance - official controls** | | | |
| **Feed material of land animal origin - blood meal - at feed mill - Surveillance - official controls** | | | |

## Table Salmonella in feed material of animal origin

| | S. Typhimurium | Salmonella spp., unspecified | S. enterica subsp. enterica |
|---|---|---|---|
| Feed material of land animal origin - bone meal - at feed mill - Surveillance - official controls | | | |
| Feed material of land animal origin - feather meal - at feed mill - Surveillance - official controls | | | |
| Feed material of land animal origin - meat and bone meal - at feed mill - Surveillance - official controls | | | |
| Feed material of land animal origin - meat meal - at feed mill - Surveillance - official controls | | | |
| Feed material of land animal origin - poultry offal meal - at feed mill - Surveillance - official controls | | | |
| Feed material of marine animal origin - fish meal - at feed mill - Surveillance - official controls | | | 1 |

## Table Salmonella in other feed matter

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Infantis | S. Rissen | S. Typhimurium | S. enterica subsp. arizonae | Salmonella spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Feed material of cereal grain origin - barley derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 335 | 0 | | | | | | |
| **Feed material of cereal grain origin - maize - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 114 | 0 | | | | | | |
| **Feed material of cereal grain origin - maize - derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 46 | 0 | | | | | | |
| **Feed material of cereal grain origin - other cereal grain derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 74 | 0 | | | | | | |
| **Feed material of cereal grain origin - wheat derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 662 | 0 | | | | | | |
| **Feed material of oil seed or fruit origin - other oil seeds derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 54 | 0 | | | | | | |
| **Feed material of oil seed or fruit origin - rape seed derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 165 | 0 | | | | | | |
| **Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 76 | 3 | | 1 | 1 | | 1 | |
| **Other feed material - forages and roughages - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 6 | 0 | | | | | | |
| **Other feed material - other plants - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 4 | 0 | | | | | | |

## Table Salmonella in compound feedingstuffs

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Enteritidis | S. Infantis | S. Typhimurium | Salmonella spp., unspecified | S. enterica subsp. enterica |
|---|---|---|---|---|---|---|---|---|---|---|
| **Compound feedingstuffs for cattle - final product - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 75 | 0 | | | | | |
| **Compound feedingstuffs for pigs - final product - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 226 | 0 | | | | | |
| **Compound feedingstuffs for pigs - process control - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 220 | 0 | | | | | |
| **Compound feedingstuffs for poultry - laying hens - final product - at processing plant - Control and eradication programmes (Cofinanced by Community)** | SVA | batch | 25 g | 37 | 1 | 1 | | | | |
| **Compound feedingstuffs for poultry - laying hens - process control - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 169 | 0 | | | | | |
| **Compound feedingstuffs for poultry -breeders - final product - at processing plant - Control and eradication programmes (Cofinanced by Community)** | | batch | 25 g | 20 | 0 | | | | | |
| **Compound feedingstuffs for poultry -breeders - process control - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 200 | 0 | | | | | |
| **Compund feedingstuffs for poultry - broilers - process control - at feed mill - Surveillance - official controls** | SVA | batch | 25 g | 273 | 0 | | | | | |
| **Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 326 | 4 | | 1 | 2 | | 1 |

## 2.1.6 Salmonella serovars and phagetype distribution

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

**Table Salmonella serovars in animals**

| Serovars | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Other poultry | | Turkeys | | Sheep | | Goats |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **0** | **18** | **0** | **27** | **0** | **21** | **0** | **0** | **0** | **10** | **0** | **1** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Agona** | | | | | | | | | | | | | |
| **S. Bovismorbificans** | | | | | | | | | | | | | |
| **S. Braenderup** | | | | | | | | | | | | | |
| **S. Brandenburg** | | | | | | | | | | | | | |
| **S. Chester** | | | | | | | | | | 2 | | | |
| **S. Concord** | | | | | | | | | | | | | |
| **S. Derby** | | | | 1 | | | | | | | | | |

## Table Salmonella serovars in animals

| Serovars | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Other poultry | | Turkeys | | Sheep | | Goats |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **0** | **18** | **0** | **27** | **0** | **21** | **0** | **0** | **0** | **10** | **0** | **1** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Enteritidis** | | 2 | | 3 | | 16 | | | | | | | |
| **S. Havana** | | | | | | | | | | | | | |
| **S. Indiana** | | | | | | 1 | | | | | | | |
| **S. Infantis** | | 1 | | | | 1 | | | | | | | |
| **S. London** | | | | | | | | | | | | | |
| **S. Montevideo** | | | | | | | | | | | | | |
| **S. Newport** | | | | | | | | | | 5 | | | |
| **S. Ohio** | | | | | | | | | | | | | |
| **S. Orion** | | 1 | | | | | | | | | | | |
| **S. Saintpaul** | | | | | | | | | | 1 | | | |
| **S. Tennessee** | | | | | | 1 | | | | | | | |
| **S. Typhimurium** | | 14 | | 11 | | 1 | | | | | | 1 | |

## Table Salmonella serovars in animals

| Serovars | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Other poultry | | Turkeys | | Sheep | | Goats |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **0** | **18** | **0** | **27** | **0** | **21** | **0** | **0** | **0** | **10** | **0** | **1** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Zanzibar** | | | | | | | | | | 2 | | | |
| **S. 4,12:i:-** | | | | 12 | | | | | | | | | |
| **S. II 6,7:m,t:-** | | | | | | | | | | | | | |
| **S. enterica subsp. enterica, rough** | | | | | | 1 | | | | | | | |

| Serovars | Goats | Birds | | Pigs - breeding animals | | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **2** | **0** | **4** | **11** | **0** | **35** | **0** | **7** | **0** | **21** | **0** | **46** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Agona** | | | | 2 | | 14 | | | | | | 5 | |

## Table Salmonella serovars in animals

| Serovars | Goats | Birds | | Pigs - breeding animals | | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **2** | **0** | **4** | **11** | **0** | **35** | **0** | **7** | **0** | **21** | **0** | **46** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Bovismorbificans** | | | | 1 | | 1 | | | | | | | |
| **S. Braenderup** | | | | | | | | | | | | | |
| **S. Brandenburg** | | | | 1 | | | | | | | | | |
| **S. Chester** | | | | | | | | | | | | | |
| **S. Concord** | | | | 1 | | | | | | | | | |
| **S. Derby** | | | | 1 | | 7 | | | | | | | |
| **S. Enteritidis** | 1 | | | | | 3 | | 7 | | 5 | | 38 | |
| **S. Havana** | | | | | | | | | | 1 | | | |
| **S. Indiana** | | | 1 | | | | | | | | | | |
| **S. Infantis** | | | | | | 1 | | | | 1 | | | |

## Table Salmonella serovars in animals

| Serovars | Goats | Birds | | Pigs - breeding animals | | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **2** | **0** | **4** | **11** | **0** | **35** | **0** | **7** | **0** | **21** | **0** | **46** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. London** | | | | | | 2 | | | | | | | |
| **S. Montevideo** | | | | | | | | | | 10 | | 1 | |
| **S. Newport** | | | | | | | | | | 3 | | | |
| **S. Ohio** | | | | 1 | | 1 | | | | | | | |
| **S. Orion** | | | | | | | | | | | | | |
| **S. Saintpaul** | 1 | | | | | | | | | | | | |
| **S. Tennessee** | | | | | | | | | | | | | |
| **S. Typhimurium** | | | 3 | 3 | | 5 | | | | 1 | | 1 | |
| **S. Zanzibar** | | | | | | | | | | | | | |
| **S. 4,12:i:-** | | | | | | 1 | | | | | | | |

## Table Salmonella serovars in animals

| Serovars | Goats | Birds | | Pigs - breeding animals | | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates serotyped** | **2** | **0** | **4** | **11** | **0** | **35** | **0** | **7** | **0** | **21** | **0** | **46** | **0** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. II 6,7:m,t:-** | | | | | | | | | | | | 1 | |
| **S. enterica subsp. enterica, rough** | | | | 1 | | | | | | | | | |

| Serovars | Gallus gallus (fowl) - broilers - at farm - environmental sample - Control and eradication programmes | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | |
| **Number of isolates serotyped** | **24** | **0** |
| **Number of isolates per serovar** | | |
| **S. Agona** | | |
| **S. Bovismorbificans** | | |

## Table Salmonella serovars in animals

| Serovars | Gallus gallus (fowl) - broilers - at farm - environmental sample - Control and eradication programmes | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | |
| **Number of isolates serotyped** | **24** | **0** |
| **Number of isolates per serovar** | | |
| **S. Braenderup** | 1 | |
| **S. Brandenburg** | | |
| **S. Chester** | | |
| **S. Concord** | | |
| **S. Derby** | | |
| **S. Enteritidis** | 18 | |
| **S. Havana** | | |
| **S. Indiana** | | |
| **S. Infantis** | 2 | |
| **S. London** | | |
| **S. Montevideo** | | |

## Table Salmonella serovars in animals

| Serovars | Gallus gallus (fowl) - broilers - at farm - environmental sample - Control and eradication programmes | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | |
| **Number of isolates serotyped** | **24** | **0** |
| **Number of isolates per serovar** | | |
| **S. Newport** | | |
| **S. Ohio** | 1 | |
| **S. Orion** | | |
| **S. Saintpaul** | | |
| **S. Tennessee** | | |
| **S. Typhimurium** | | |
| **S. Zanzibar** | | |
| **S. 4,12:i:-** | | |
| **S. II 6,7:m,t:-** | | |
| **S. enterica subsp. enterica, rough** | 2 | |

## Table Salmonella serovars in food

| Serovars | Meat from bovine animals | | Meat from pig | | Meat from broilers (Gallus gallus) | | Other poultry | | Other products of animal origin | | Meat, mixed meat - meat products | | Other food - at processing plant |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | **12** | | **57** | | **72** | | **10** | | | | **8** | | **10** |
| **Number of isolates serotyped** | **12** | **0** | **57** | **0** | **72** | **0** | **10** | **0** | **4** | **0** | **8** | **0** | **10** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Agona** | | | 8 | | 21 | | | | | | 1 | | 1 |
| **S. Derby** | 2 | | 17 | | 1 | | | | | | | | |
| **S. Enteritidis** | 2 | | 4 | | 11 | | | | 2 | | | | 8 |
| **S. Heidelberg** | | | 1 | | | | | | | | 1 | | |
| **S. Infantis** | | | 5 | | 15 | | | | | | | | 1 |
| **S. Kentucky** | | | | | 5 | | | | | | | | |
| **S. London** | 1 | | 2 | | | | | | | | 3 | | |
| **S. Menston** | | | 1 | | | | | | | | | | |
| **S. Montevideo** | | | 1 | | 2 | | | | | | | | |
| **S. Newport** | | | | | 7 | | 8 | | | | | | |
| **S. Ohio** | | | | | 4 | | | | | | | | |

## Table Salmonella serovars in food

| Serovars | Meat from bovine animals | | Meat from pig | | Meat from broilers (Gallus gallus) | | Other poultry | | Other products of animal origin | | Meat, mixed meat - meat products | | Other food - at processing plant |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | **12** | | **57** | | **72** | | **10** | | | | **8** | | **10** |
| **Number of isolates serotyped** | **12** | **0** | **57** | **0** | **72** | **0** | **10** | **0** | **4** | **0** | **8** | **0** | **10** |
| **Number of isolates per serovar** | | | | | | | | | | | | | |
| **S. Saintpaul** | | | | | 1 | | 1 | | | | | | |
| **S. Tennessee** | | | | | 1 | | | | | | | | |
| **S. Thompson** | | | | | 1 | | | | | | | | |
| **S. Typhimurium** | 3 | | 7 | | 2 | | 1 | | 1 | | 2 | | |
| **S. 6,7:-:1,5** | | | | | 1 | | | | 1 | | | | |
| **S. enterica subsp. enterica** | 4 | | 11 | | | | | | | | | | |
| **S. enterica subsp. salamae** | | | | | | | | | | | 1 | | |

## Table Salmonella serovars in food

| Serovars | Other food - at processing plant |
|---|---|
| **Sources of isolates** | **Clinical** |
| **Number of isolates in the laboratory** | |
| **Number of isolates serotyped** | **0** |
| **Number of isolates per serovar** | |
| **S. Agona** | |
| **S. Derby** | |
| **S. Enteritidis** | |
| **S. Heidelberg** | |
| **S. Infantis** | |
| **S. Kentucky** | |
| **S. London** | |
| **S. Menston** | |
| **S. Montevideo** | |
| **S. Newport** | |
| **S. Ohio** | |
| **S. Saintpaul** | |

## Table Salmonella serovars in food

| Serovars | Other food - at processing plant |
|---|---|
| **Sources of isolates** | **Clinical** |
| **Number of isolates in the laboratory** | |
| **Number of isolates serotyped** | **0** |
| **Number of isolates per serovar** | |
| **S. Tennessee** | |
| **S. Thompson** | |
| **S. Typhimurium** | |
| **S. 6,7:-:1,5** | |
| **S. enterica subsp. enterica** | |
| **S. enterica subsp. salamae** | |

## Table Salmonella Enteritidis phagetypes in animals

| Phagetype | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Goats | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - broilers - Control and eradication programmes - industry sampling | | Cattle (bovine animals) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates phagetyped** | **3** | **0** | **5** | **0** | **0** | **1** | **7** | **0** | **38** | **0** | **18** | **0** | **0** |
| **Number of isolates per type** | | | | | | | | | | | | | |
| **PT 13a** | | | | | | | | | 1 | | | | |
| **PT 31** | | | | | | | | | 1 | | | | |
| **PT 23** | | | | | | | | | 1 | | 2 | | |
| **6a** | | | | | | | 1 | | 1 | | | | |
| **6** | | | | | | | | | 3 | | | | |
| **4b** | | | | | | | 1 | | 1 | | | | |
| **4** | | | 2 | | | | 3 | | 3 | | | | |
| **3** | | | | | | | | | 1 | | | | |
| **8** | 2 | | 3 | | | 1 | 1 | | 21 | | 15 | | |
| **13** | 1 | | | | | | | | 3 | | 1 | | |

## Table Salmonella Enteritidis phagetypes in animals

| Phagetype | Pigs - fattening pigs | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Goats | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - broilers - Control and eradication programmes - industry sampling | | Cattle (bovine animals) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates phagetyped** | **3** | **0** | **5** | **0** | **0** | **1** | **7** | **0** | **38** | **0** | **18** | **0** | **0** |
| **Number of isolates per type** | | | | | | | | | | | | | |
| **12** | | | | | | | | | | | | | |
| **1b** | | | | | | | | | 1 | | | | |
| **PT 9b** | | | | | | | 1 | | | | | | |
| **U** | | | | | | | | | 1 | | | | |

| Phagetype | Cattle (bovine animals) | Pigs | | Gallus gallus (fowl) | | Other poultry | |
|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | |
| **Number of isolates phagetyped** | **2** | **0** | **3** | **0** | **16** | **0** | **0** |
| **Number of isolates per type** | | | | | | | |
| **PT 13a** | 1 | | | | 1 | | |

## Table Salmonella Enteritidis phagetypes in animals

| Phagetype | Cattle (bovine animals) | Pigs | | Gallus gallus (fowl) | | Other poultry | |
|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | |
| **Number of isolates phagetyped** | **2** | **0** | **3** | **0** | **16** | **0** | **0** |
| **Number of isolates per type** | | | | | | | |
| **PT 31** | | | | | | | |
| **PT 23** | | | | | | | |
| **6a** | | | | | 2 | | |
| **6** | | | | | | | |
| **4b** | | | | | | | |
| **4** | | | | | 7 | | |
| **3** | | | | | | | |
| **8** | | | 3 | | 5 | | |
| **13** | 1 | | | | | | |
| **12** | | | | | 1 | | |
| **1b** | | | | | | | |
| **PT 9b** | | | | | | | |

## Table Salmonella Enteritidis phagetypes in animals

| Phagetype | Cattle (bovine animals) | Pigs | | Gallus gallus (fowl) | | Other poultry | |
|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | |
| **Number of isolates phagetyped** | **2** | **0** | **3** | **0** | **16** | **0** | **0** |
| **Number of isolates per type** | | | | | | | |
| **U** | | | | | | | |

## Table Salmonella Enteritidis phagetypes in food

| Phagetype | Meat from bovine animals | | Meat from pig | | Meat from broilers (Gallus gallus) | | Other poultry | | Other products of animal origin | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | | | | |
| **Number of isolates phagetyped** | **2** | **0** | **4** | **0** | **11** | **0** | **0** | **0** | **15** | **0** |
| **Number of isolates per type** | | | | | | | | | | |
| **PT 6** | | | | | | | | | 1 | |
| **PT 8** | | | | | | | | | 3 | |
| **PT 13a** | | | | | | | | | 1 | |
| **PT 23** | | | 1 | | | | | | | |
| **PT 7** | | | | | | | | | 1 | |
| **1** | | | | | | | | | 2 | |
| **6** | | | | | | | | | 2 | |
| **4** | 1 | | | | 8 | | | | | |
| **8** | 1 | | 3 | | 2 | | | | 3 | |
| **7** | | | | | 1 | | | | | |
| **PT 38** | | | | | | | | | 1 | |
| **PT 13** | | | | | | | | | 1 | |

## Table Salmonella Enteritidis phagetypes in humans

| Phagetype | humans | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | **509** |
| **Number of isolates phagetyped** | **0** | **508** |
| **Number of isolates per type** | | |
| **PT 1** | | 6 |
| **PT 4** | | 49 |
| **PT 6** | | 26 |
| **PT 8** | | 234 |
| **PT 14b** | | 11 |
| **PT 21** | | 23 |
| **PT 1b** | | 11 |
| **PT 21c** | | 1 |
| **PT 13a** | | 57 |
| **PT 2** | | 5 |
| **PT 4b** | | 17 |
| **PT 6a** | | 5 |

## Table Salmonella Enteritidis phagetypes in humans

| Phagetype | humans | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | **509** |
| **Number of isolates phagetyped** | **0** | **508** |
| **Number of isolates per type** | | |
| **PT 6b** | | 7 |
| **PT 22** | | 1 |
| **PT 23** | | 2 |
| **10** | | 1 |
| **PT 6c** | | 4 |
| **PT 24** | | 1 |
| **PT 13** | | 37 |
| **U** | | 1 |
| **RDNC** | | 1 |
| **PT 8a** | | 7 |
| **PT 4a** | | 1 |

## Table Salmonella Typhimurium phagetypes in animals

| Phagetype | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Other poultry | | Gallus gallus (fowl) - breeding flocks for meat production line - Control and eradication programmes - official and industry sampling | | Pigs - breeding animals | | Pigs - fattening pigs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates phagetyped** | **0** | **14** | **0** | **11** | **0** | **1** | **0** | **0** | **1** | **0** | **3** | **0** | **5** |
| **Number of isolates per type** | | | | | | | | | | | | | |
| **DT 104** | | 10 | | 6 | | | | | | | 3 | | 3 |
| **DT 120** | | | | 1 | | | | | | | | | 1 |
| **U 302** | | | | 3 | | | | | | | | | |
| **U 310** | | | | | | | | | | | | | |
| **DT 42** | | | | | | 1 | | | | | | | |
| **DT 194** | | | | 1 | | | | | | | | | |
| **DT 35** | | | | | | | | | 1 | | | | |
| **DT U** | | | | | | | | | | | | | 1 |
| **DT 1** | | 2 | | | | | | | | | | | |
| **DT 2** | | | | | | | | | | | | | |

## Table Salmonella Typhimurium phagetypes in animals

| Phagetype | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Other poultry | | Gallus gallus (fowl) - breeding flocks for meat production line - Control and eradication programmes - official and industry sampling | | Pigs - breeding animals | | Pigs - fattening pigs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** |
| **Number of isolates in the laboratory** | | | | | | | | | | | | | |
| **Number of isolates phagetyped** | **0** | **14** | **0** | **11** | **0** | **1** | **0** | **0** | **1** | **0** | **3** | **0** | **5** |
| **Number of isolates per type** | | | | | | | | | | | | | |
| **DT 116** | | 2 | | | | | | | | | | | |

| Phagetype | Pigs - fattening pigs | Sheep | | Birds | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | |
| **Number of isolates phagetyped** | **0** | **0** | **1** | **0** | **3** | **1** | **0** |
| **Number of isolates per type** | | | | | | | |
| **DT 104** | | | 1 | | | | |
| **DT 120** | | | | | | | |
| **U 302** | | | | | | | |

## Table Salmonella Typhimurium phagetypes in animals

| Phagetype | Pigs - fattening pigs | Sheep | | Birds | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | | | | | | |
| **Number of isolates phagetyped** | **0** | **0** | **1** | **0** | **3** | **1** | **0** |
| **Number of isolates per type** | | | | | | | |
| **U 310** | | | | | 1 | | |
| **DT 42** | | | | | | | |
| **DT 194** | | | | | | | |
| **DT 35** | | | | | 1 | | |
| **DT U** | | | | | | | |
| **DT 1** | | | | | | | |
| **DT 2** | | | | | 1 | 1 | |
| **DT 116** | | | | | | | |

## Table Salmonella Typhimurium phagetypes in food

| Phagetype | Meat from bovine animals | | Meat from pig | | Meat from broilers (Gallus gallus) | | Other poultry | | Other products of animal origin | | Meat from turkey - carcass - chilled | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | **3** | | **7** | | **2** | | | | **3** | | **1** | |
| **Number of isolates phagetyped** | **3** | **0** | **7** | **0** | **2** | **0** | **0** | **0** | **3** | **0** | **1** | **0** |
| **Number of isolates per type** | | | | | | | | | | | | |
| **DT 7** | | | 1 | | | | | | | | | |
| **DT 104** | 2 | | 2 | | | | | | 3 | | 1 | |
| **U 302** | | | 1 | | 1 | | | | | | | |
| **DT 194** | | | 2 | | | | | | | | | |
| **RDNC** | | | 1 | | | | | | | | | |
| **DT 27** | | | | | 1 | | | | | | | |
| **DT 116** | 1 | | | | | | | | | | | |

## Table Salmonella Typhimurium phagetypes in humans

| Phagetype | humans | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | **97** |
| **Number of isolates phagetyped** | **0** | **91** |
| **Number of isolates per type** | | |
| **DT 8** | | 2 |
| **DT 104** | | 47 |
| **DT 120** | | 3 |
| **U 302** | | 5 |
| **DT 41** | | 2 |
| **DT 132** | | 3 |
| **U 310** | | 2 |
| **DT 42** | | 1 |
| **DT 194** | | 3 |
| **DT 55** | | 2 |
| **DT 109** | | 6 |
| **DT 10** | | 1 |

## Table Salmonella Typhimurium phagetypes in humans

| Phagetype | humans | |
|---|---|---|
| **Sources of isolates** | **Monitoring** | **Clinical** |
| **Number of isolates in the laboratory** | | **97** |
| **Number of isolates phagetyped** | **0** | **91** |
| **Number of isolates per type** | | |
| **DT 110** | | 1 |
| **5** | | 3 |
| **DT 1** | | 5 |
| **DT 2** | | 2 |
| **RDNC** | | 3 |

## 2.1.7 Antimicrobial resistance in Salmonella isolates

### A. Antimicrobial resistance in Salmonella in cattle

**Sampling strategy used in monitoring**

**Frequency of the sampling**

**Methods of sampling (description of sampling techniques)**

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

**Laboratory used for detection for resistance**

**Antimicrobials included in monitoring**

## B. Antimicrobial resistance in Salmonella in pigs

### Sampling strategy used in monitoring

#### Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic.

#### Type of specimen taken

faeces, rectal swabs, large intestine content

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

The sampling is random from diseased animals at farm.

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

Only one isolate from each serotype per holding and year is examinated.

#### Methods used for collecting data

Data is collected from laboratories in the NRL.

### Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of NCCLS, i.e. Broth dilution metod on standardised EUMVS format

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
enrofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim
ceftazidime
ampicillin

#### Breakpoints used in testing

epidemiological cut-off values recomanded by EUCAST

## C. Antimicrobial resistance in Salmonella in poultry

### Sampling strategy used in monitoring

#### Frequency of the sampling

There is the specific monitoring program for antimicrobial resistance applied in the Czech Republic.

#### Type of specimen taken

faeces, cloacal swabs, caecum, organs. Samples in breeding flocks (Gallus gallus) and laying hens producing tabloe eggs are taken in the framework of National control programmes.

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

1.The sampling is random from the diseased animals at farm.
2. Faeces and dust

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

Only one isolate of each serotype per holding and year is examinated.

#### Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

### Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of NCCLS, i.e. Broth dilution metod on standardised EUMVS format

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
enrofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim
ceftazidime
ampicillin

#### Breakpoints used in testing

epidemiological cut-off values recomanded by EUCAST

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

### Sampling strategy used in monitoring

#### Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic. This monitoring take place together with monitorig zoonoses in accordance with Directive 2003/99/EC one times a month in slaughterhouses.

#### Type of specimen taken

The sampling is carry out from carcasses in slaughterhouses. The carcasses of bovine animals are sampled using the non-destructive method with swabs of carcass-100cm2.The alternative method is the dectructive method. Four muscle samples cover 5 cm2 each (total 20 cm2)are sampled before chilling. Sections of tissue cut a slice of 5 cm2 and maximum thickness of 5 mm off the carcass with sterile instrument.
The samples must be aseptically cut and placed aseptically into a sample container in slaughterhouses, transfered to the laboratory.

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

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

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

The investigation carry out in all isolated serotype.

#### Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

### Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of NCCLS, i.e. Broth dilution metod on standardised EUMVS format

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin

cefotaxim
ceftazidim
ampicillin

**Breakpoints used in testing**

epidemiological cut-off velues recomanded by EUCAST

## Control program/mechanisms

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

**Recent actions taken to control the zoonoses**

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

### Sampling strategy used in monitoring

#### Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied in the Czech Republic. This monitoring take place in accordance with Directive 2003/99/EC. The sampling of carcasses is carry out one times a month in slaughterhouses.

#### Type of specimen taken

The same samples are taken in zoonoses monitoring - four tissue samples or swabs from five pig carcases.The pig carcasses are sampled using the non-destructive method with swabs of carcass-100cm2.The alternative method is the destructive method. Four samples of the muscle tissue cover 5 cm2 each (total 20 cm2) before chilling. Pieces of tissue cut a slice of 5 cm2 and maximum thickness of 5 mm off the carcass with sterile instrument.
The samples must be aseptically cut and placed aseptically into a sample container in slaughterhouse, transfered to the laboratory.

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

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

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

The investigation carry out in all isolated serotype.

#### Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

### Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of NCCLS, i.e. Broth dilution metod on standardised EUMVS format

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim

ceftazidime
ampicillin

**Breakpoints used in testing**

epidemiological cut-off values recomanded by EUCAST

## Preventive measures in place

Creation and control of HACCP and GHP system.

## Control program/mechanisms

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

**Recent actions taken to control the zoonoses**

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

### Sampling strategy used in monitoring

#### Frequency of the sampling

There is the specific monitoring program for antimicrobial resistence applied together with monitoring zoonoses in the Czech Republic. This monitoring take place together with monitorig zoonoses in accordance with Directive 2003/99/EC.The samlptes were taken one times a month in slaughterhouses.

#### Type of specimen taken

Neck skin samples are taken randomly from 15 carcasses of broilers after chilling. Minimal weight each of samples is 10g.

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

The sampling is stratified by location slaughterhouses. The sampling is the component of zoonoses monitoring.

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

The investigation carry out in all isolated serotype.

#### Methods used for collecting data

The isolates are collected from laboratories to be tested centrally at the NRL.

### Laboratory methodology used for identification of the microbial isolates

As the standardized method is certified of NCCLS, i.e. Broth dilution metod on standardised EUMVS format

### Laboratory used for detection for resistance

#### Antimicrobials included in monitoring

tetracycline
chloramphenicol
ciprofloxacin
nalidixic acid
trimethoprim
sulfonamide
streptomycin
gentamicin
cefotaxim
ceftazidime
ampicillin

#### Breakpoints used in testing

epidemiological cut-off values recomanded by EUCAST

## Control program/mechanisms

### The control program/strategies in place

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Allert System for Food and Feed.

### Recent actions taken to control the zoonoses

SVA, NIPH and CAFIA carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

# Table Antimicrobial susceptibility testing of S. Agona in Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Agona | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 5 | 0 | | | | | | | 4 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 5 | 0 | | | | | | | | | | | 5 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 5 | 0 | | | | | | | | | | | 3 | 2 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 5 | 0 | | | | | 4 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 5 | 0 | | | | | | | 4 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 5 | 0 | | 2 | 3 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 5 | 0 | | | | | | | | 1 | 4 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 5 | 0 | | | | | | | | | | 4 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 5 | 0 | | | | | | | | | | | | | 2 | 3 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 5 | 0 | | | | | | | | | 3 | 2 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 5 | 0 | | | | | | | 4 | 1 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Agona in Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Agona | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 16 | 0 | | | | | | | 12 | 4 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 16 | 2 | | | | | | | | | | | 12 | 2 | | | 2 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 16 | 0 | | | | | | | | | | 3 | 12 | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 16 | 0 | | | | | 4 | 11 | 1 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 16 | 0 | | | | | | 2 | 6 | 8 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 16 | 0 | | 3 | 13 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 16 | 1 | | | | | | | | | 14 | 1 | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 16 | 0 | | | | | | | | | | 6 | 10 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 16 | 1 | | | | | | | | | | | | 1 | 3 | 11 | | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 16 | 1 | | | | | | | | | 13 | 2 | | | | 1 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 16 | 1 | | | | | | | 13 | 2 | | | | | 1 | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Agona in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

| S. Agona | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 7 | 0 | | | | | | | 6 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 7 | 0 | | | | | | | | | | | 6 | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 7 | 0 | | | | | | | | | | | 2 | 5 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 7 | 0 | | | | 2 | 5 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 7 | 0 | | | | | 2 | | 5 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 7 | 0 | | 1 | 6 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 7 | 0 | | | | | | | | 1 | 5 | 1 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 7 | 0 | | | | | | | | | | 4 | 3 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 7 | 0 | | | | | | | | | | | | | 1 | 4 | 2 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 7 | 0 | | | | | | | | | 2 | 5 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 7 | 0 | | | | | | | 7 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Agona in Meat from pig - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. Agona | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 7 | 0 | | | | | | | 7 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 7 | 1 | | | | | | | | | | | 5 | 1 | | | 1 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 7 | 1 | | | | | | | | | | 3 | 2 | 1 | | 1 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 7 | 0 | | | | 3 | 3 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 7 | 0 | | | | | 2 | 1 | 4 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 7 | 0 | | 4 | 3 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 7 | 1 | | | | | | | | 3 | 3 | | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 7 | 0 | | | | | | | | | | 6 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 7 | 1 | | | | | | | | | | | 1 | | 1 | 2 | 2 | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 7 | 0 | | | | | | | | 1 | 3 | 2 | 1 | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 7 | 0 | | | | | | | 5 | 2 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Agona in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Agona | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 12 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 12 | 0 | | | | | | | | 1 | 1 | 10 | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 12 | 0 | | | | | | | | | | | 11 | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 12 | 0 | | | | | | | | | | 6 | 4 | 2 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 12 | 0 | | | | | 12 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 12 | 0 | | | | | | 1 | 11 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 12 | 0 | | | 12 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 12 | 0 | | | | | | | 1 | 6 | 5 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 12 | 0 | | | | | | | | | | 5 | 7 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 12 | 0 | | | | | | | | | | | | 1 | 1 | 9 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 12 | 0 | | | | | | | | | 11 | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 12 | 0 | | | | | | | 12 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Derby in Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Derby | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 8 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 8 | 0 | | | | | | 2 | 5 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 8 | 2 | | | | | | | | | | | 5 | 1 | | | 2 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 8 | 0 | | | | | | | | | | | 4 | 4 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 8 | 0 | | | | | 4 | 4 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 8 | 0 | | | | | | | 7 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 8 | 0 | | 1 | 7 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 8 | 1 | | | | | | | | 1 | 5 | 1 | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 8 | 0 | | | | | | | | | | 5 | 3 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 8 | 2 | | | | | | | | | | | | | 1 | 5 | | | | 2 | | | | |
| Tetracyclines | Tetracyclin | 16 | 8 | 3 | | | | | | | | | 2 | 3 | | | | 3 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 8 | 0 | | | | | | | 6 | 2 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Derby in Meat from pig - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. Derby | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 7 | 0 | | | | | | | 3 | 4 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 7 | 0 | | | | | | | | | | | 3 | 2 | | 2 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 7 | 2 | | | | | | | | | | 1 | 3 | 1 | | 2 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 7 | 0 | | | | 1 | 4 | 2 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 7 | 0 | | | | | 1 | 1 | 4 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 7 | 0 | | | 7 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 7 | 3 | | | | | | | | 1 | 2 | 1 | | | 3 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 7 | 0 | | | | | | | | | | 5 | 2 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 7 | 3 | | | | | | | | | | | | | 2 | 2 | | | | 3 | | | | |
| Tetracyclines | Tetracyclin | 16 | 7 | 2 | | | | | | | | | 3 | 2 | | | | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 7 | 2 | | | | | | | 4 | 1 | | | | | 2 | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Derby in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

| S. Derby | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Enteritidis | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 5 | 0 | | | | | | | 3 | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 5 | 0 | | | | | | | | | | 4 | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 5 | 0 | | | | | | | | | | 2 | 3 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 5 | 0 | | | | | 5 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 5 | 0 | | | | | | 1 | 4 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 5 | 0 | | | 5 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 5 | 0 | | | | | | | | | 5 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 5 | 0 | | | | | | | | | | 4 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 5 | 1 | | | | | | | | | | | | | | 3 | 1 | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 5 | 0 | | | | | | | | | 5 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 5 | 0 | | | | | | | 3 | 2 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

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

| S. Enteritidis | | Gallus gallus (fowl) - unspecified - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 16 | 0 | | | | | | 3 | 11 | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 16 | 0 | | | | | | | | | 1 | 7 | 8 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 16 | 0 | | | | | | | | | | 11 | 5 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 16 | 0 | | | | | 11 | 5 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 16 | 0 | | | | | | 6 | 9 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 16 | 0 | | 3 | 12 | 1 | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 16 | 0 | | | | | 1 | | | 5 | 6 | 4 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 16 | 0 | | | | | | | | | | 4 | 12 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 16 | 1 | | | | | | | | | | | | 1 | 3 | 11 | | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 16 | 0 | | | | | | | | 1 | 11 | 4 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 16 | 1 | | | | | | | 13 | 2 | | | | | 1 | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

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

| S. Enteritidis | | Cattle (bovine animals) - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 0 | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 0 | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | 2 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 0 | | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 1 | | | | | | | | | 1 | | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 0 | | | | | | | | | | 2 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 0 | | | | | | | | | | | | 1 | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 0 | | | | | | | | 1 | 1 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 0 | | | | | | | 1 | 1 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S.Enteritidis in animals

| S. Enteritidis | | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Turkeys | | Gallus gallus (fowl) - laying hens | | Gallus gallus (fowl) - broilers | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | yes | | yes | | | | no | | no | | no | | no | | no | |
| Number of isolates available in the laboratory | | 2 | | 3 | | 16 | | | | 38 | | 18 | | 7 | | 5 | | 3 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| | Streptomycin | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| Amphenicols | Chloramphenicol | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| Cephalosporins | Cefotaxim | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| | Ceftazidim | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| Fluoroquinolones | Ciprofloxacin | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 8 | 7 | 0 | 5 | 0 | 3 | 0 |
| Fully sensitive | Fully sensitive | 2 | 1 | 3 | 3 | 16 | 15 | | | 38 | 35 | 18 | 10 | 7 | 7 | 5 | 4 | 3 | 2 |
| Penicillins | Ampicillin | 2 | 1 | 3 | 0 | 16 | 0 | | | 38 | 2 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |
| Quinolones | Nalidixic acid | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 8 | 7 | 0 | 5 | 0 | 3 | 0 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | 2 | 1 | | | | | | | 38 | 3 | | | | | 5 | 1 | 3 | 1 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | | | | | 16 | 1 | | | | | 18 | 8 | | | | | | |
| Sulfonamides | Sulfonamide | 2 | 0 | 3 | 0 | 16 | 1 | | | 38 | 1 | 18 | 0 | 7 | 0 | 5 | 1 | 3 | 0 |
| Tetracyclines | Tetracyclin | 2 | 0 | 3 | 0 | 16 | 0 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 1 |
| Trimethoprim | Trimethoprim | 2 | 0 | 3 | 0 | 16 | 1 | | | 38 | 0 | 18 | 0 | 7 | 0 | 5 | 0 | 3 | 0 |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Enteritidis | | Gallus gallus (fowl) - breeding flocks for egg production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 7 | 0 | | | | | | 2 | 5 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 7 | 0 | | | | | | | | | 1 | 5 | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 7 | 0 | | | | | | | | | | 5 | 2 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 7 | 0 | | | | | 7 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 7 | 0 | | | | | | 2 | 5 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 7 | 0 | | | 7 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 7 | 0 | | | | | | | | 2 | 5 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 7 | 0 | | | | | | | | | | 1 | 6 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 7 | 0 | | | | | | | | | | | | | 2 | 4 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 7 | 0 | | | | | | | | | 7 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 7 | 0 | | | | | | | 7 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official sampling - quantitative data [Dilution method]

| S. Enteritidis | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 38 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 38 | 0 | | | | | | 4 | 30 | 3 | 1 | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 38 | 0 | | | | | | | | | 4 | 30 | 4 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 38 | 0 | | | | | | | | | | 18 | 20 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 38 | 0 | | | | 1 | 35 | 2 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 38 | 0 | | | | | | 15 | 23 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 38 | 0 | | 1 | 36 | 1 | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 38 | 2 | | | | | | | | 10 | 25 | 1 | | | 2 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 38 | 0 | | | | | | | | | | 27 | 11 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 38 | 1 | | | | | | | | | | | | 1 | 8 | 21 | 7 | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 38 | 0 | | | | | | | | 1 | 32 | 5 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 38 | 0 | | | | | | | 29 | 9 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - broilers - at farm - environmental sample - Monitoring - industry sampling - objective sampling - quantitative data [Dilution method]

| S. Enteritidis | | Gallus gallus (fowl) - broilers - at farm - environmental sample - Monitoring - industry sampling - objective sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 18 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 18 | 0 | | | | | | | 12 | 6 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 18 | 0 | | | | | | | | | | 18 | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 18 | 0 | | | | | | | | | | 4 | 14 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 18 | 0 | | | | | 18 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 18 | 0 | | | | | | 1 | 17 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 18 | 2 | | | 10 | | 6 | 2 | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 18 | 0 | | | | | | | | | 17 | 1 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 18 | 8 | | | | | | | | | | 9 | 1 | | | 8 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 18 | 0 | | | | | | | | | | | | | | 17 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 18 | 0 | | | | | | | | | 18 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 18 | 0 | | | | | | | 18 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

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

| S. Enteritidis | | Pigs - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 3 | 0 | | | | | | | 1 | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 3 | 0 | | | | | | | | | | 1 | 2 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 3 | 0 | | | | | | | | | | 1 | 2 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 3 | 0 | | | | | 1 | 2 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 3 | 0 | | | | | | 3 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 3 | 0 | | 2 | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 3 | 0 | | | | | | | | | 3 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 3 | 0 | | | | | | | | | | 2 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 3 | 0 | | | | | | | | | | | | | 1 | 2 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 3 | 0 | | | | | | | | | 3 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 3 | 0 | | | | | | | 3 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Enteritidis | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 3 | 0 | | | | | | | 3 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 3 | 0 | | | | | | | | | | 2 | | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 3 | 0 | | | | | | | | | | | 2 | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 3 | 0 | | | | | 3 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 3 | 0 | | | | | | 1 | 2 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 3 | 0 | | 3 | | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 3 | 1 | | | | | | | | | 2 | | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 3 | 0 | | | | | | | | | | 3 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 3 | 0 | | | | | | | | | | | | | | 2 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 3 | 0 | | | | | | | | | 3 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 3 | 0 | | | | | | | 3 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

| S. Enteritidis | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 7 | 0 | | | | | | | 7 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 7 | 0 | | | | | | | | | 2 | 5 | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 7 | 0 | | | | | | | | | | | 4 | 3 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 7 | 0 | | | | | 4 | 3 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 7 | 0 | | | | | | 2 | 5 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 7 | 0 | | 2 | 5 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 7 | 0 | | | | | | | | | 5 | 2 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 7 | 0 | | | | | | | | | | 5 | 2 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 7 | 0 | | | | | | | | | | | | 1 | 1 | 4 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 7 | 0 | | | | | | | | | 1 | 5 | 1 | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 7 | 0 | | | | 7 | | | | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from bovine animals - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. Enteritidis | | Meat from bovine animals - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 0 | | | | | | | | | 1 | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 0 | | | | | | | | | | | 2 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | 2 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 0 | | | 2 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 0 | | | | | | | | 1 | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 0 | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 0 | | | | | | | | | | | 1 | | 1 | | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 0 | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

| S. Enteritidis | | Meat from bovine animals - carcass - - carcass swabs - Monitoring - official sampling | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Survey - EU baseline survey | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | |
|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | no | | no | |
| Number of isolates available in the laboratory | | 2 | | 4 | | 7 | |
| **Antimicrobials:** | | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 2 | 0 | 4 | 0 | 7 | 0 |
| | Streptomycin | 2 | 0 | 4 | 0 | 7 | 0 |
| Amphenicols | Chloramphenicol | 2 | 0 | 4 | 0 | 7 | 0 |
| Cephalosporins | Cefotaxim | 2 | 0 | 4 | 0 | 7 | 0 |
| | Ceftazidim | 2 | 0 | 4 | 0 | 7 | 0 |
| Fluoroquinolones | Ciprofloxacin | 2 | 0 | 4 | 0 | 7 | 0 |
| Fully sensitive | Fully sensitive | 2 | 2 | 4 | 4 | 7 | 7 |
| Penicillins | Ampicillin | 2 | 0 | 4 | 0 | 7 | 0 |
| Quinolones | Nalidixic acid | 2 | 0 | 4 | 0 | 7 | 0 |
| Sulfonamides | Sulfonamide | 2 | 0 | 4 | 0 | 7 | 0 |
| Tetracyclines | Tetracyclin | 2 | 0 | 4 | 0 | 7 | 0 |
| Trimethoprim | Trimethoprim | 2 | 0 | 4 | 0 | 7 | 0 |

# Table Antimicrobial susceptibility testing of S. Enteritidis in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. Enteritidis | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Aminoglycosides | Gentamicin | 7 | 7 | 0 | | | | | | | | 2 | | 1 | 3 | | | | | | 1 | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 7 | 7 | 0 | | | | | | | 4 | 2 | | 1 | | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 7 | 7 | 0 | | | | | | | | | | | | | | | 1 | 2 | 3 | | | | | | 1 |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 7 | 7 | 0 | | | | | | | | | | | 1 | | | 1 | 2 | | | | 1 | 1 | | | |
| | Ceftazidim | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 7 | 7 | 0 | | | | | | | | | | | | | | | 1 | | 1 | 4 | | | | | |
| | Enrofloxacin | 7 | 7 | 0 | | | | | | | | | | | | | | | 2 | 1 | 1 | 1 | 1 | | | 1 | |
| Penicillins | Ampicillin | 7 | 7 | 1 | 1 | | | | | | | | | | 1 | 2 | | 2 | 1 | | | | | | | | |
| Quinolones | Nalidixic acid | 7 | 7 | 0 | | | | | | | | | | 1 | | | 1 | 3 | 1 | 1 | | | | | | | |
| Sulfonamides | Sulfonamide | 7 | 7 | 0 | | | | | | | | | | | 1 | | | | | | 1 | | 3 | 1 | | | 1 |
| Tetracyclines | Tetracyclin | 7 | 7 | 0 | | | | | | | | | | 1 | 1 | | 3 | | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 7 | 7 | 0 | | | | | | | | | | | | 1 | | 1 | 3 | | 1 | | | | | | 1 |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |

## Table Antimicrobial susceptibility testing of S. Enteritidis in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. Enteritidis | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | |
| Number of isolates available in the laboratory | | 7 | | | | | | |
| **Antimicrobials:** | | 29 | 30 | 31 | 32 | 33 | 34 | >=35 |
| Aminoglycosides | Gentamicin | | | | | | | |
| | Kanamycin | | | | | | | |
| | Neomycin | | | | | | | |
| | Streptomycin | | | | | | | |
| Amphenicols | Chloramphenicol | | | | | | | |
| | Florfenicol | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | | | | | | |
| | Cefotaxim | | | | | 1 | | |
| | Ceftazidim | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 1 | | | | | | |
| | Enrofloxacin | | | | | | | |
| Penicillins | Ampicillin | | | | | | | |
| Quinolones | Nalidixic acid | | | | | | | |
| Sulfonamides | Sulfonamide | | | | | | | |
| Tetracyclines | Tetracyclin | | | | | | | |
| Trimethoprim | Trimethoprim | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Enteritidis | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 4 | 0 | | | | | | | 3 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 4 | 0 | | | | | | | | | 1 | 2 | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 4 | 0 | | | | | | | | | | | 3 | 1 | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 4 | 0 | | | | 1 | 2 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 4 | 0 | | | | | | 2 | 2 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 4 | 0 | | | 4 | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 4 | 0 | | | | | | | | 3 | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 4 | 0 | | | | | | | | | | 3 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 4 | 0 | | | | | | | | | | | | | | 3 | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 4 | 0 | | | | | | | | | 4 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 4 | 0 | | | | | | | 4 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Enteritidis - qualitative data

| S. Enteritidis | | Compound feedingstuffs for cattle | | Compound feedingstuffs for pigs | | Compound feedingstuffs for poultry (non specified) | | Compound feedingstuffs for poultry - laying hens - final product - non-pelleted/meal - at farm - feed sample - Control and eradication programmes - official sampling - objective sampling | |
|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | | | | | | | yes | |
| Number of isolates available in the laboratory | | | | | | | | 1 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | | | | | | | 1 | 0 |
| | Streptomycin | | | | | | | 1 | 0 |
| Amphenicols | Chloramphenicol | | | | | | | 1 | 0 |
| Cephalosporins | Cefotaxim | | | | | | | 1 | 0 |
| | Ceftazidim | | | | | | | 1 | 0 |
| Fluoroquinolones | Ciprofloxacin | | | | | | | 1 | 0 |
| Fully sensitive | Fully sensitive | | | | | | | 1 | 1 |
| Penicillins | Ampicillin | | | | | | | 1 | 0 |
| Quinolones | Nalidixic acid | | | | | | | 1 | 0 |
| Sulfonamides | Sulfonamide | | | | | | | 1 | 0 |
| Tetracyclines | Tetracyclin | | | | | | | 1 | 0 |
| Trimethoprim | Trimethoprim | | | | | | | 1 | 0 |

# Table Antimicrobial susceptibility testing of S. Enteritidis in final product - Compound feedingstuffs for poultry - laying hens - non-pelleted/meal - at farm - feed sample - Control and eradication programmes - official sampling - objective sampling - quantitative data [Dilution method]

| S. Enteritidis | | Compound feedingstuffs for poultry - laying hens - final product - non-pelleted/meal - at farm - feed sample - Control and eradication programmes - official sampling - objective sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | | 1 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of Salmonella in humans, Salmonella Enteritidis

| S. Enteritidis | | humans | |
|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | |
| Number of isolates available in the laboratory | | 211 | |
| **Antimicrobials:** | | N | n |
| Aminoglycosides | Gentamicin | 211 | 0 |
| | Kanamycin | 211 | 0 |
| | Neomycin | 211 | 0 |
| | Streptomycin | 211 | 4 |
| Amphenicols | Chloramphenicol | 211 | 0 |
| Fluoroquinolones | Ciprofloxacin | 211 | 0 |
| | Enrofloxacin | 211 | 1 |
| Fully sensitive | Fully sensitive | 211 | 155 |
| Penicillins | Ampicillin | 211 | 44 |
| Quinolones | Nalidixic acid | 211 | 8 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | 211 | 50 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | 211 | 6 |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | 211 | 0 |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | 211 | 0 |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 211 | 0 |
| Sulfonamides | Sulfonamide | 211 | 3 |
| Tetracyclines | Tetracyclin | 211 | 0 |
| Trimethoprim | Trimethoprim | 211 | 0 |

# Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - broilers - at farm - environmental sample - Monitoring - industry sampling - objective sampling - quantitative data [Dilution method]

| S. Infantis | | Gallus gallus (fowl) - broilers - at farm - environmental sample - Monitoring - industry sampling - objective sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | 1 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 0 | | | | | | | | | | | | | 1 | 1 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 0 | | | | | | | | | | | | 2 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | | 1 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 2 | | | | | | | | 2 | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 0 | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 2 | | | | | | | | | | | | | | 2 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 2 | | | | | | | | | | | | | | | | | | 2 | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 2 | | | | | | | | | | | | | | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Infantis | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimicrobials: | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | 1 | | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# 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) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimicrobials: | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 1 | | | | | | | | 1 | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 1 | | | | | | | | | | | | | | | | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Infantis in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

| S. Infantis | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 10 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 10 | 0 | | | | | | 1 | 6 | 3 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 10 | 0 | | | | | | | | | | | 1 | 1 | 5 | 3 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 10 | 0 | | | | | | | | | | | 6 | 4 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 10 | 0 | | | | | 6 | 3 | 1 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 10 | 0 | | | | | | 4 | 4 | 2 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 10 | 8 | | | 2 | | | | 3 | 5 | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 10 | 0 | | | | | | | | 2 | 6 | 2 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 10 | 8 | | | | | | | | | | 1 | 1 | | | 8 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 10 | 8 | | | | | | | | | | | | | 1 | 1 | | | | 8 | | | | |
| Tetracyclines | Tetracyclin | 16 | 10 | 8 | | | | | | | | | 1 | 1 | | | | 8 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 10 | 0 | | | | | | | 9 | 1 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Infantis in Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls - quantitative data [Dilution method]

| S. Infantis | | Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Infantis - qualitative data

| S. Infantis | | Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls | | Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - Surveillance - official controls | | Feed material of land animal origin - poultry offal meal - at feed mill - Surveillance - official controls | |
|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | yes | | yes | |
| Number of isolates available in the laboratory | | 1 | | 1 | | 1 | |
| **Antimicrobials:** | | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 1 | 0 | 1 | 0 | 1 | 0 |
| | Streptomycin | 1 | 0 | 1 | 0 | 1 | 0 |
| Amphenicols | Chloramphenicol | 1 | 0 | 1 | 0 | 1 | 0 |
| Cephalosporins | Cefotaxim | 1 | 0 | 1 | 0 | 1 | 0 |
| | Ceftazidim | 1 | 0 | 1 | 0 | 1 | 0 |
| Fluoroquinolones | Ciprofloxacin | 1 | 0 | 1 | 0 | 1 | 0 |
| Fully sensitive | Fully sensitive | 1 | 1 | 1 | 1 | 1 | 1 |
| Penicillins | Ampicillin | 1 | 0 | 1 | 0 | 1 | 0 |
| Quinolones | Nalidixic acid | 1 | 0 | 1 | 0 | 1 | 0 |
| Sulfonamides | Sulfonamide | 1 | 0 | 1 | 0 | 1 | 0 |
| Tetracyclines | Tetracyclin | 1 | 0 | 1 | 0 | 1 | 0 |
| Trimethoprim | Trimethoprim | 1 | 0 | 1 | 0 | 1 | 0 |

# Table Antimicrobial susceptibility testing of S. Infantis in Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - Surveillance - official controls - quantitative data [Dilution method]

| S. Infantis | | Feed material of oil seed or fruit origin - soya (bean) derived - at feed mill - Surveillance - official controls | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Infantis in Feed material of land animal origin - poultry offal meal - Surveillance - official controls - quantitative data [Dilution method]

| S. Infantis | | Feed material of land animal origin - poultry offal meal - Surveillance - official controls | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | | | 1 | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Montevideo | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 10 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 10 | 0 | | | | | | | 10 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 10 | 0 | | | | | | | | | | | 9 | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 10 | 0 | | | | | | | | | | 3 | 3 | 4 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 10 | 0 | | | | | 3 | 7 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 10 | 0 | | | | | | 7 | 3 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 10 | 0 | | 1 | 9 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 10 | 0 | | | | | | | | 5 | 1 | 4 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 10 | 0 | | | | | | | | | | 1 | 5 | 4 | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 10 | 0 | | | | | | | | | | | | | | 10 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 10 | 0 | | | | | | | | | 3 | 7 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 10 | 0 | | | | | | | 10 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Newport in Turkeys - at farm - environmental sample - Clinical investigations - quantitative data [Dilution method]

| S. Newport | | Turkeys - at farm - environmental sample - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 5 | 0 | | | | | | | 3 | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 5 | 0 | | | | | | | | | | 2 | 2 | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 5 | 0 | | | | | | | | | | 3 | 2 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 5 | 0 | | | | 2 | 1 | 2 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 5 | 0 | | | | | | 3 | 2 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 5 | 0 | | 3 | 2 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 5 | 5 | | | | | | | | | | | | | 5 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 5 | 0 | | | | | | | | | | 5 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 5 | 0 | | | | | | | | | | | | | | 2 | 3 | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 5 | 5 | | | | | | | | | | | | | | 5 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 5 | 0 | | | | | | | 2 | 3 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Thompson in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. Thompson | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Aminoglycosides | Gentamicin | *1* | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | *1* | 1 | 0 | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | *1* | 1 | 0 | | | | | | | | | | | | | | | | 1 | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | *1* | 1 | 0 | | | | | | | | | | | | | | | | | | 1 | | | | | |
| | Ceftazidim | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | *1* | 1 | 0 | | | | | | | | | | | | | | | | | | 1 | | | | | |
| | Enrofloxacin | *1* | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Penicillins | Ampicillin | *1* | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Quinolones | Nalidixic acid | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Tetracyclines | Tetracyclin | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | *1* | 1 | 0 | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |

## Table Antimicrobial susceptibility testing of S. Thompson in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. Thompson | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | |
| **Antimicrobials:** | | 29 | 30 | 31 | 32 | 33 | 34 | >=35 |
| Aminoglycosides | Gentamicin | | | | | | | |
| | Kanamycin | | | | | | | |
| | Neomycin | | | | | | | |
| | Streptomycin | | | | | | | |
| Amphenicols | Chloramphenicol | | | | | | | |
| | Florfenicol | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | | | | | | |
| | Cefotaxim | | | | | | | |
| | Ceftazidim | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | | | | | | | |
| | Enrofloxacin | | | | | | | |
| Penicillins | Ampicillin | | | | | | | |
| Quinolones | Nalidixic acid | | | | | | | |
| Sulfonamides | Sulfonamide | | | | | | | |
| Tetracyclines | Tetracyclin | | | | | | | |
| Trimethoprim | Trimethoprim | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | | | | | | |

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

| S. Typhimurium | | Cattle (bovine animals) - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 14 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 14 | 0 | | | | | | | 11 | 3 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 14 | 6 | | | | | | | | | | | 4 | 2 | | 2 | 6 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 14 | 4 | | | | | | | | | | 2 | 8 | | | 4 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 14 | 0 | | | | 3 | 10 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 14 | 0 | | | | | 2 | 5 | 6 | 1 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 14 | 4 | | 2 | 7 | | 1 | 4 | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 14 | 0 | | | | | | | | | 3 | 1 | 10 | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 14 | 5 | | | | | | | | | | 7 | 2 | | | 5 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 14 | 12 | | | | | | | | | | | | | | 2 | | | | 12 | | | | |
| Tetracyclines | Tetracyclin | 16 | 14 | 4 | | | | | | | | 2 | 7 | 1 | | | 2 | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 14 | 2 | | | | | | | 11 | 1 | | | | | 2 | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

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

| S. Typhimurium | | Pigs - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 11 | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 11 | 0 | | | | | | 1 | 4 | 6 | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 11 | 9 | | | | | | | | | | | 1 | | | 1 | 9 | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 11 | 7 | | | | | | | | | | | 3 | 1 | | 7 | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 11 | 0 | | | | 1 | 5 | 5 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 11 | 0 | | | | | | 3 | 8 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 11 | 1 | | 3 | 6 | | 1 | 1 | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 11 | 11 | | | | | | | | | | | | | 11 | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 11 | 2 | | | | | | | | | | 4 | 3 | 2 | | 2 | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 11 | 11 | | | | | | | | | | | | | | | | | | 11 | | | |
| Tetracyclines | Tetracyclin | 16 | 11 | 9 | | | | | | | | | 1 | 1 | | | 2 | 7 | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 11 | 1 | | | | | | | 7 | 3 | | | | | 1 | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Typhimurium | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimicrobials: | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S.Typhimurium in animals

| S. Typhimurium | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Turkeys | | Gallus gallus (fowl) - laying hens | | Gallus gallus (fowl) - broilers | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | yes | | yes | | yes | | | | no | | | | no | |
| Number of isolates available in the laboratory | | 8 | | 14 | | 11 | | 1 | | | | 1 | | | | 1 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 8 | 0 | 14 | 0 | 11 | 0 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| | Streptomycin | 8 | 5 | 14 | 8 | 11 | 10 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Amphenicols | Chloramphenicol | 8 | 4 | 14 | 4 | 11 | 7 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Cephalosporins | Cefotaxim | 8 | 0 | 14 | 0 | 11 | 0 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| | Ceftazidim | 8 | 0 | 14 | 0 | 11 | 0 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Fluoroquinolones | Ciprofloxacin | 8 | 1 | 14 | 5 | 11 | 2 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Fully sensitive | Fully sensitive | 8 | 2 | 14 | 2 | 11 | 0 | 1 | 0 | | | 1 | 1 | | | 1 | 1 |
| Penicillins | Ampicillin | 8 | 5 | 14 | 10 | 11 | 11 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Quinolones | Nalidixic acid | 8 | 1 | 14 | 5 | 11 | 2 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | 8 | 2 | 14 | 2 | | | 1 | 1 | | | | | | | | |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | | | | | 11 | 2 | | | | | | | | | | |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | | | 14 | 6 | 11 | 2 | | | | | | | | | | |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 8 | 4 | 14 | 4 | 11 | 7 | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 8 | 5 | 14 | 12 | 11 | 11 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |
| Tetracyclines | Tetracyclin | 8 | 5 | 14 | 4 | 11 | 7 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |

## Table Antimicrobial susceptibility testing of S.Typhimurium in animals

| S. Typhimurium | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Turkeys | | Gallus gallus (fowl) - laying hens | | Gallus gallus (fowl) - broilers | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | yes | | yes | | yes | | | | no | | | | no | |
| Number of isolates available in the laboratory | | 8 | | 14 | | 11 | | 1 | | | | 1 | | | | 1 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Trimethoprim | Trimethoprim | 8 | 0 | 14 | 2 | 11 | 1 | 1 | 0 | | | 1 | 0 | | | 1 | 0 |

# 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) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling - quantitative data [Dilution method]

| S. Typhimurium | | Gallus gallus (fowl) - laying hens - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 0 | | | | | | | | | 1 | | | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | 1 | | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | 1 | | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 0 | | | | | | | | | | | | | 1 | | | | | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 0 | | | | | | | | 1 | | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey - quantitative data [Dilution method]

| S. Typhimurium | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 8 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 8 | 0 | | | | | | 2 | 4 | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 8 | 4 | | | | | | | | | | | 2 | 1 | | 1 | 4 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 8 | 4 | | | | | | | | | | 2 | 2 | | | 4 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 8 | 0 | | | | 1 | 4 | 2 | 1 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 8 | 0 | | | | | | 1 | 7 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 8 | 0 | | 2 | 5 | 1 | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 8 | 5 | | | | | | | | 1 | 2 | | | | 5 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 8 | 1 | | | | | | | | | | 4 | 3 | | | 1 | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 8 | 5 | | | | | | | | | | | | | 2 | | 1 | | | 5 | | | | |
| Tetracyclines | Tetracyclin | 16 | 8 | 5 | | | | | | | | | 3 | | | | 2 | 3 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 8 | 0 | | | | | | | 6 | 2 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in offal - Meat from pig - liver - quantitative data [Diffusion method]

| S. Typhimurium | | Meat from pig - offal - liver | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Aminoglycosides | Gentamicin | *1* | 1 | 0 | | | | | | | | | | | 1 | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| | Ceftazidim | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | *1* | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | *1* | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Penicillins | Ampicillin | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | *1* | 1 | 0 | | | | | | | | | | | | | | | 1 | | | | | | | | |
| Sulfonamides | Sulfonamide | *1* | 1 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Tetracyclines | Tetracyclin | *1* | 1 | 0 | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | *1* | 1 | 0 | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in offal - Meat from pig - liver - quantitative data [Diffusion method]

| S. Typhimurium | | Meat from pig - offal - liver | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | |
| **Antimicrobials:** | | 29 | 30 | 31 | 32 | 33 | 34 | >=35 |
| Aminoglycosides | Gentamicin | | | | | | | |
| | Kanamycin | | | | | | | |
| | Neomycin | | | | | | | |
| | Streptomycin | | | | | | | |
| Amphenicols | Chloramphenicol | | | | | | | |
| | Florfenicol | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | | | | | | |
| | Cefotaxim | | | | | | | |
| | Ceftazidim | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | | | 1 | | | | |
| | Enrofloxacin | | | | | | | |
| Penicillins | Ampicillin | | | | | | | |
| Quinolones | Nalidixic acid | | | | | | | |
| Sulfonamides | Sulfonamide | | | | | | | |
| Tetracyclines | Tetracyclin | | | | | | | |
| Trimethoprim | Trimethoprim | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from broilers (Gallus gallus) - carcass - at slaughterhouse - animal sample - neck skin - Monitoring - official sampling - quantitative data [Dilution method]

| S. Typhimurium | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 1 | 0 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 1 | 0 | | | | | 1 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 1 | 0 | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 1 | 0 | | | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 1 | 1 | | | | | | | | | | | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 1 | 1 | | | | | | | | | | | | | | | | | 1 | | | | | |
| Tetracyclines | Tetracyclin | 16 | 1 | 1 | | | | | | | | | | | | | 1 | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 1 | 0 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from bovine animals - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. Typhimurium | | Meat from bovine animals - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | | 2 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 1 | | | | | | | | | | | | | | 1 | 1 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 1 | | | | | | | | | | | | 1 | | 1 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 0 | | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 1 | | | | | | | | | | 1 | | | 1 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 0 | | | | | | | | | | 1 | | 1 | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 2 | | | | | | | | | | | | | | | | | 2 | | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 2 | | | | | | | | | | | | | | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 1 | | | | | | | 1 | | | | | | 1 | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data

| S. Typhimurium | | Meat from bovine animals - carcass - - carcass swabs - Monitoring - official sampling | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | |
|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | no | | no | |
| Number of isolates available in the laboratory | | 2 | | 2 | | 1 | |
| **Antimicrobials:** | | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 2 | 0 | 2 | 0 | 1 | 0 |
| | Streptomycin | 2 | 2 | 2 | 2 | 1 | 1 |
| Amphenicols | Chloramphenicol | 2 | 1 | 2 | 2 | 1 | 1 |
| Cephalosporins | Cefotaxim | 2 | 0 | 2 | 0 | 1 | 0 |
| | Ceftazidim | 2 | 0 | 2 | 0 | 1 | 0 |
| Fluoroquinolones | Ciprofloxacin | 2 | 0 | 2 | 0 | 1 | 0 |
| Fully sensitive | Fully sensitive | 2 | 0 | 2 | 0 | 1 | 0 |
| Penicillins | Ampicillin | 2 | 1 | 2 | 2 | 1 | 1 |
| Quinolones | Nalidixic acid | 2 | 0 | 2 | 0 | 1 | 0 |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | 2 | 1 | | | | |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 2 | 1 | 2 | 2 | 1 | 1 |
| Sulfonamides | Sulfonamide | 2 | 2 | 2 | 2 | 1 | 1 |
| Tetracyclines | Tetracyclin | 2 | 2 | 2 | 2 | 1 | 1 |
| Trimethoprim | Trimethoprim | 2 | 1 | 2 | 0 | 1 | 0 |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Meat from pig - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. Typhimurium | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 0 | | | | | | | | | | | | | | 2 | | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 2 | | | | | | | | | | | | | | 2 | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | | 2 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 0 | | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 2 | | | | | | | | | | | | | 2 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 0 | | | | | | | | | | 2 | | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 2 | | | | | | | | | | | | | | | | | 2 | | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 2 | | | | | | | | | | | | | | 2 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. Typhimurium - qualitative data

| S. Typhimurium | | Compound feedingstuffs for cattle | | Compound feedingstuffs for pigs | | Compound feedingstuffs for poultry (non specified) | | Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls | |
|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | | | | | | | yes | |
| Number of isolates available in the laboratory | | | | | | | | 2 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | | | | | | | 2 | 0 |
| | Streptomycin | | | | | | | 2 | 1 |
| Amphenicols | Chloramphenicol | | | | | | | 2 | 0 |
| Cephalosporins | Cefotaxim | | | | | | | 2 | 0 |
| | Ceftazidim | | | | | | | 2 | 0 |
| Fluoroquinolones | Ciprofloxacin | | | | | | | 2 | 0 |
| Fully sensitive | Fully sensitive | | | | | | | 2 | 1 |
| Penicillins | Ampicillin | | | | | | | 2 | 0 |
| Quinolones | Nalidixic acid | | | | | | | 2 | 0 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | | | | | | | 2 | 1 |
| Sulfonamides | Sulfonamide | | | | | | | 2 | 1 |
| Tetracyclines | Tetracyclin | | | | | | | 2 | 0 |
| Trimethoprim | Trimethoprim | | | | | | | 2 | 0 |

# Table Antimicrobial susceptibility testing of S. Typhimurium in Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls - quantitative data [Dilution method]

| S. Typhimurium | | Pet food - dog snacks (pig ears, chewing bones) - at processing plant - Surveillance - official controls | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 2 | 0 | | | | | | | 1 | 1 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 2 | 1 | | | | | | | | | | | | 1 | | | 1 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 2 | 0 | | | | | | | | | | | 2 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 2 | 0 | | | | | 2 | | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 2 | 0 | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 2 | 0 | | | 2 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 2 | 0 | | | | | | | | | 2 | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 2 | 0 | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 2 | 1 | | | | | | | | | | | | | 1 | | | | | 1 | | | | |
| Tetracyclines | Tetracyclin | 16 | 2 | 0 | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 2 | 0 | | | | | | | 2 | | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of Salmonella in humans, Salmonella Typhimurium

| S. Typhimurium | | humans | |
|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | |
| Number of isolates available in the laboratory | | 93 | |
| **Antimicrobials:** | | N | n |
| Aminoglycosides | Gentamicin | 93 | 0 |
| | Kanamycin | 93 | 2 |
| | Neomycin | 93 | 1 |
| | Streptomycin | 93 | 37 |
| Fluoroquinolones | Ciprofloxacin | 93 | 0 |
| | Enrofloxacin | 93 | 1 |
| Fully sensitive | Fully sensitive | 93 | 42 |
| Number of multiresistant S. Typhimurium | with penta resistance | 93 | 17 |
| Penicillins | Ampicillin | 93 | 37 |
| Quinolones | Nalidixic acid | 93 | 4 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | 93 | 9 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | 93 | 3 |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | 93 | 1 |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | 93 | 5 |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 93 | 33 |
| Sulfonamides | Sulfonamide | 93 | 42 |
| Tetracyclines | Tetracyclin | 93 | 43 |
| Trimethoprim | Trimethoprim | 93 | 8 |

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

| S. 4,12:i:- | | Pigs - Clinical investigations | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 12 | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 12 | 0 | | | | | | | 6 | 6 | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 12 | 12 | | | | | | | | | | | | | | | 12 | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 12 | 0 | | | | | | | | | | 3 | 9 | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 12 | 0 | | | | | 7 | 5 | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 12 | 0 | | | | | | 2 | 10 | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 12 | 0 | | 2 | 9 | 1 | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 12 | 12 | | | | | | | | | | | | | 12 | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 12 | 0 | | | | | | | | | | 6 | 6 | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 12 | 12 | | | | | | | | | | | | | | | | | 12 | | | | |
| Tetracyclines | Tetracyclin | 16 | 12 | 12 | | | | | | | | | | | | | | 12 | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 12 | 0 | | | | | | | 9 | 3 | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. 4,12:i:- in Meat from pig - carcass - at slaughterhouse - animal sample - carcass swabs - Monitoring - official sampling - quantitative data [Dilution method]

| S. 4,12:i:- | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 9 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| Aminoglycosides | Gentamicin | 4 | 9 | 0 | | | | | | | 6 | 3 | | | | | | | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | 64 | 9 | 9 | | | | | | | | | | | | | | | 9 | | | | | | | |
| Amphenicols | Chloramphenicol | 32 | 9 | 0 | | | | | | | | | | 1 | 8 | | | | | | | | | | | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | 1 | 9 | 0 | | | | 2 | 2 | 5 | | | | | | | | | | | | | | | | |
| | Ceftazidim | 4 | 9 | 0 | | | | | | 2 | 7 | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 0.12 | 9 | 0 | | 3 | 6 | | | | | | | | | | | | | | | | | | | |
| | Enrofloxacin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |
| Penicillins | Ampicillin | 8 | 9 | 9 | | | | | | | | | | | | | 9 | | | | | | | | | |
| Quinolones | Nalidixic acid | 32 | 9 | 0 | | | | | | | | | | 7 | 2 | | | | | | | | | | | |
| Sulfonamides | Sulfonamide | 512 | 9 | 9 | | | | | | | | | | | | | | | | | | 9 | | | | |
| Tetracyclines | Tetracyclin | 16 | 9 | 9 | | | | | | | | | | | | | | 9 | | | | | | | | |
| Trimethoprim | Trimethoprim | 4 | 9 | 0 | | | | | | | 7 | 2 | | | | | | | | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | |

# Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. 6,7:-:1,5 | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Aminoglycosides | Gentamicin | *2* | 2 | 0 | | | | | | | | | | | | | 1 | | 1 | | | | | | | | |
| | Kanamycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Neomycin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Streptomycin | *2* | 1 | 0 | | | | | | | | | | 1 | | | | | | | | | | | | | |
| Amphenicols | Chloramphenicol | *2* | 2 | 0 | | | | | | | | | | | | | | | | | 1 | | | | | 1 | |
| | Florfenicol | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Cefotaxim | *2* | 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| | Ceftazidim | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | *2* | 2 | 0 | | | | | | | | | | | | | | | | | | 1 | | | | | |
| | Enrofloxacin | *2* | 2 | 0 | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Penicillins | Ampicillin | *2* | 2 | 0 | | | | | | | | | | | | | | | | 1 | | | 1 | | | | |
| Quinolones | Nalidixic acid | *2* | 2 | 0 | 1 | | | | | | | | | | | | | | | | | | 1 | | | | |
| Sulfonamides | Sulfonamide | *2* | 2 | 0 | 1 | | | | | | | | | | | | | | 1 | | | | | | | | |
| Tetracyclines | Tetracyclin | *2* | 2 | 0 | 1 | | | | | | | | | | | | | 1 | | | | | | | | | |
| Trimethoprim | Trimethoprim | *2* | 2 | 0 | | | | | | | | | | | | | | | | | | | | 1 | | 1 | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |

## Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in carcass - Meat from broilers (Gallus gallus) - spent hens - quantitative data [Diffusion method]

| S. 6,7:-:1,5 | | Meat from broilers (Gallus gallus) - carcass - spent hens | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | |
| Number of isolates available in the laboratory | | 2 | | | | | | |
| **Antimicrobials:** | | 29 | 30 | 31 | 32 | 33 | 34 | >=35 |
| Aminoglycosides | Gentamicin | | | | | | | |
| | Kanamycin | | | | | | | |
| | Neomycin | | | | | | | |
| | Streptomycin | | | | | | | |
| Amphenicols | Chloramphenicol | | | | | | | |
| | Florfenicol | | | | | | | |
| Cephalosporins | 3rd generation cephalosporins | | | | | | | |
| | Cefotaxim | 2 | | | | | | |
| | Ceftazidim | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 1 | | | | | | |
| | Enrofloxacin | | 1 | | | | | |
| Penicillins | Ampicillin | | | | | | | |
| Quinolones | Nalidixic acid | | | | | | | |
| Sulfonamides | Sulfonamide | | | | | | | |
| Tetracyclines | Tetracyclin | | | | | | | |
| Trimethoprim | Trimethoprim | | | | | | | |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | | | | | | | |

# Table Antimicrobial susceptibility testing of Salmonella in animals

| Salmonella spp. | | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Turkeys | | Gallus gallus (fowl) - laying hens | | Gallus gallus (fowl) - broilers | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | yes | | yes | | yes | | no | | no | | no | | no | |
| Number of isolates available in the laboratory | | 2 | | 13 | | 4 | | 10 | | 7 | | 6 | | 15 | | 35 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 2 | 0 | 13 | 0 | 4 | 0 | 10 | 0 | 7 | 0 | 6 | 0 | 15 | 0 | 35 | 2 |
| | Streptomycin | 2 | 0 | 13 | 13 | 4 | 2 | 10 | 2 | 7 | 0 | 6 | 3 | 15 | 0 | 35 | 9 |
| Amphenicols | Chloramphenicol | 2 | 0 | 13 | 0 | 4 | 0 | 10 | 2 | 7 | 0 | 6 | 0 | 15 | 0 | 35 | 4 |
| Cephalosporins | Cefotaxim | 2 | 0 | 13 | 0 | 4 | 0 | 10 | 0 | 7 | 0 | 6 | 0 | 15 | 0 | 35 | 1 |
| | Ceftazidim | 2 | 0 | 13 | 0 | 4 | 0 | 10 | 0 | 7 | 0 | 6 | 0 | 15 | 0 | 35 | 1 |
| Fluoroquinolones | Ciprofloxacin | 2 | 0 | 13 | 0 | 4 | 1 | 10 | 0 | 7 | 0 | 6 | 4 | 15 | 0 | 35 | 1 |
| Fully sensitive | Fully sensitive | 2 | 2 | 13 | 0 | 4 | 2 | 10 | 3 | 7 | 7 | 6 | 2 | 15 | 12 | 35 | 25 |
| Penicillins | Ampicillin | 2 | 0 | 13 | 13 | 4 | 1 | 10 | 5 | 7 | 0 | 6 | 0 | 15 | 3 | 35 | 5 |
| Quinolones | Nalidixic acid | 2 | 0 | 13 | 0 | 4 | 1 | 10 | 0 | 7 | 0 | 6 | 4 | 15 | 0 | 35 | 0 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | | | | | | | | | | | | | | | 35 | 1 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | | | | | | | 10 | 5 | | | | | 15 | 3 | | |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | | | | | | | | | | | | | | | 35 | 3 |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | | | 13 | 13 | | | 10 | 2 | | | 6 | 1 | | | 35 | 3 |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | | | | | 4 | 2 | | | | | 6 | 3 | | | 35 | 3 |
| Sulfonamides | Sulfonamide | 2 | 0 | 13 | 13 | 4 | 2 | 10 | 2 | 7 | 0 | 6 | 4 | 15 | 0 | 35 | 8 |

## Table Antimicrobial susceptibility testing of Salmonella in animals

| Salmonella spp. | | Cattle (bovine animals) | | Pigs | | Gallus gallus (fowl) | | Turkeys | | Gallus gallus (fowl) - laying hens | | Gallus gallus (fowl) - broilers | | Gallus gallus (fowl) - breeding flocks for meat production line - at farm - environmental sample - Control and eradication programmes - official and industry sampling | | Pigs - breeding animals - at farm - environmental sample - Survey - EU baseline survey | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | yes | | yes | | yes | | no | | no | | no | | no | |
| Number of isolates available in the laboratory | | 2 | | 13 | | 4 | | 10 | | 7 | | 6 | | 15 | | 35 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Tetracyclines | Tetracyclin | 2 | 0 | 13 | 13 | 4 | 2 | 10 | 7 | 7 | 0 | 6 | 4 | 15 | 3 | 35 | 10 |
| Trimethoprim | Trimethoprim | 2 | 0 | 13 | 0 | 4 | 1 | 10 | 0 | 7 | 0 | 6 | 0 | 15 | 0 | 35 | 4 |

# Table Antimicrobial susceptibility testing of Salmonella spp. in food

| Salmonella spp. | | Meat from bovine animals | | Meat from pig | | Meat from broilers (Gallus gallus) | | Meat from other poultry species | | Meat from bovine animals - carcass - - carcass swabs - Monitoring - official sampling | | Meat from pig - carcass - - carcass swabs - Monitoring - official sampling | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Monitoring - official sampling | | Meat from broilers (Gallus gallus) - carcass - - neck skin - Survey - EU baseline survey | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | | | | | yes | | | | no | | no | | no | | no | |
| Number of isolates available in the laboratory | | | | | | 1 | | | | 5 | | 30 | | 26 | | 19 | |
| **Antimicrobials:** | | N | n | N | n | N | n | N | n | N | n | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | | | | | 1 | 0 | | | 5 | 0 | 30 | 0 | 26 | 0 | 19 | 0 |
| | Streptomycin | | | | | 1 | 1 | | | 5 | 3 | 30 | 13 | 26 | 3 | 19 | 0 |
| Amphenicols | Chloramphenicol | | | | | 1 | 0 | | | 5 | 0 | 30 | 3 | 26 | 0 | 19 | 0 |
| Cephalosporins | Cefotaxim | | | | | 1 | 0 | | | 5 | 0 | 30 | 0 | 26 | 0 | 19 | 0 |
| | Ceftazidim | | | | | | | | | 5 | 0 | 30 | 0 | 26 | 0 | 19 | 0 |
| Fluoroquinolones | Ciprofloxacin | | | | | 1 | 0 | | | 5 | 0 | 30 | 0 | 26 | 8 | 19 | 1 |
| | Enrofloxacin | | | | | 1 | 0 | | | | | | | | | | |
| Fully sensitive | Fully sensitive | | | | | | | | | 5 | 2 | 30 | 16 | 26 | 14 | 19 | 18 |
| Penicillins | Ampicillin | | | | | 1 | 0 | | | 5 | 3 | 30 | 13 | 26 | 3 | 19 | 1 |
| Quinolones | Nalidixic acid | | | | | 1 | 1 | | | 5 | 0 | 30 | 0 | 26 | 8 | 19 | 1 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | | | | | | | | | | | 30 | 1 | | | | |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | | | | | | | | | | | | | 26 | 3 | | |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | | | | | 1 | 1 | | | 5 | 3 | 30 | 12 | 26 | 4 | | |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | | | | | | | | | | | 30 | 1 | 26 | 3 | 19 | 1 |
| Sulfonamides | Sulfonamide | | | | | 1 | 1 | | | 5 | 3 | 30 | 13 | 26 | 8 | 19 | 1 |
| Tetracyclines | Tetracyclin | | | | | 1 | 0 | | | 5 | 3 | 30 | 11 | 26 | 11 | 19 | 1 |
| Trimethoprim | Trimethoprim | | | | | | | | | 5 | 3 | 30 | 1 | 26 | 0 | 19 | 0 |

# Table Antimicrobial susceptibility testing of Salmonella in humans, Salmonella spp.

| Salmonella spp. | | humans | |
|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | no | |
| Number of isolates available in the laboratory | | 361 | |
| **Antimicrobials:** | | N | n |
| Aminoglycosides | Gentamicin | 361 | 0 |
| | Kanamycin | 361 | 3 |
| | Neomycin | 361 | 1 |
| | Streptomycin | 361 | 78 |
| Amphenicols | Chloramphenicol | 361 | 33 |
| Fluoroquinolones | Ciprofloxacin | 361 | 0 |
| | Enrofloxacin | 361 | 2 |
| Fully sensitive | Fully sensitive | 361 | 208 |
| Penicillins | Ampicillin | 361 | 116 |
| Quinolones | Nalidixic acid | 361 | 18 |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | 361 | 68 |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | 361 | 10 |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | 361 | 2 |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | 361 | 36 |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 361 | 37 |
| Sulfonamides | Sulfonamide | 361 | 82 |
| Tetracyclines | Tetracyclin | 361 | 79 |
| Trimethoprim | Trimethoprim | 361 | 10 |

## Table Breakpoints for antibiotic resistance testing

| Test Method Used | |
|---|---|
| Disc diffusion | ○ |
| Agar dilution | ○ |
| Broth dilution | ◉ |
| E-test | ○ |

| Standards used for testing |
|---|
| NCCLS<br>Eucast |

| | | | Breakpoint concentration (microg/ml) | | | Range tested<br>concentration (microg/ml) | | Disk content | Breakpoint Zone diameter (mm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Standard for breakpoint | Susceptible <= | Intermediate | Resistant > | lowest | highest | microg | Susceptible >= | Intermediate | Resistant <= |
| **Aminoglycosides** | **Gentamicin** | EUCAST | 2 | | 4 | 0.25 | 32 | | | | |
| | **Streptomycin** | EUCAST | 32 | | 64 | 2 | 128 | | | | |
| **Amphenicols** | **Chloramphenicol** | Eucast | 16 | | 32 | 2 | 64 | | | | |
| **Cephalosporins** | **Cefotaxim** | EUCAST | 0.5 | | 1 | 0.06 | 4 | | | | |
| | **Ceftazidim** | EUCAST | 2 | | 4 | 0.25 | 16 | | | | |
| **Fluoroquinolones** | **Ciprofloxacin** | EUCAST | 0.06 | | 0.12 | 0.008 | 8 | | | | |
| **Penicillins** | **Ampicillin** | EUCAST | 4 | | 8 | 0.5 | 32 | | | | |
| **Quinolones** | **Nalidixic acid** | EUCAST | 16 | | 32 | 4 | 64 | | | | |
| **Sulfonamides** | **Sulfonamide** | EUCAST | 256 | | 512 | 8 | 1024 | | | | |
| **Tetracyclines** | **Tetracyclin** | Eucast | 8 | | 16 | 1 | 64 | | | | |
| **Trimethoprim** | **Trimethoprim** | EUCAST | 2 | | 4 | 0.5 | 32 | | | | |

## Table Breakpoints for antibiotic resistance testing

| Test Method Used | |
|---|---|
| Disc diffusion | ◉ |
| Agar dilution | ○ |
| Broth dilution | ◉ |
| E-test | ○ |

| Standards used for testing |
|---|
| NCCLS<br>EUCAST |

| | | | Breakpoint concentration (microg/ml) | | | Range tested<br>concentration (microg/ml) | | Disk content | Breakpoint Zone diameter (mm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Standard for breakpoint | Susceptible <= | Intermediate | Resistant > | lowest | highest | microg | Susceptible >= | Intermediate | Resistant <= |
| **Aminoglycosides** | **Gentamicin** | EUCAST/NCCLS | 2 | | 4 | 0.25 | 32 | | 15 | 13.14 | 12 |
| | **Streptomycin** | EUCAST/NCCLS | 32 | | 64 | 2 | 128 | | 15 | 12.13.14 | 11 |
| **Amphenicols** | **Chloramphenicol** | EUCAST/ NCCLS | 16 | | 32 | 2 | 64 | | 18 | 13.14.15.16.17 | 12 |
| **Cephalosporins** | **Cefotaxim** | EUCAST/NCCLS | 0.5 | | 1 | 0.06 | 4 | | 23 | 15.16.17.18.19. 20.21.22 | 14 |
| | **Ceftazidim** | EUCAST | 2 | | 4 | 0.25 | 16 | | | | |
| **Fluoroquinolones** | **Ciprofloxacin** | EUCAST/NCCLS | 0.06 | | 0.12 | 0.008 | 8 | | 21 | 16.17.18.19.20 | 15 |
| | **Enrofloxacin** | NCCLS | | | | | | | 20 | 17.18.19 | 16 |
| **Penicillins** | **Ampicillin** | EUCAST/NCCLS | 4 | | 8 | 0.5 | 32 | | 17 | 14.15.16 | 13 |
| **Quinolones** | **Nalidixic acid** | EUCAST/NCCLS | 16 | | 32 | 4 | 64 | | 19 | 14.15.16.17.18 | 13 |
| **Sulfonamides** | **Sulfonamide** | EUCAST/NCCLS | 256 | | 512 | 8 | 1024 | | 17 | 13.14.15.16 | 12 |
| **Tetracyclines** | **Tetracyclin** | EUCAST/NCCLS | 8 | | 16 | 1 | 64 | | 19 | 15.16.17.18 | 14 |
| **Trimethoprim** | **Trimethoprim** | EUCAST/NCCLS | 2 | | 4 | 0.5 | 32 | | 16 | 11.12.13.14.15 | 10 |

## Table Breakpoints for antibiotic resistance testing

| Test Method Used | |
|---|---|
| Disc diffusion | ○ |
| Agar dilution | ○ |
| Broth dilution | ◉ |
| E-test | ○ |

| Standards used for testing |
|---|
| EUCAST |

| | | | Breakpoint concentration (microg/ml) | | | Range tested<br/>concentration (microg/ml) | | Disk content | Breakpoint Zone diameter (mm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Standard for breakpoint | Susceptible <= | Intermediate | Resistant > | lowest | highest | microg | Susceptible >= | Intermediate | Resistant <= |
| **Aminoglycosides** | **Gentamicin** | EUCAST | 2 | | 4 | 0.25 | 32 | | | | |
| | **Streptomycin** | EUCAST | 32 | | 64 | 2 | 128 | | | | |
| **Amphenicols** | **Chloramphenicol** | EUCAST | 16 | | 32 | 2 | 64 | | | | |
| **Cephalosporins** | **Cefotaxim** | EUCAST | 0.5 | | 1 | 0.06 | 4 | | | | |
| | **Ceftazidim** | EUCAST | 2 | | 4 | 0.25 | 16 | | | | |
| **Fluoroquinolones** | **Ciprofloxacin** | EUCAST | 0.06 | | 0.12 | 0.008 | 8 | | | | |
| **Penicillins** | **Ampicillin** | EUCAST | 4 | | 8 | 0.5 | 32 | | | | |
| **Quinolones** | **Nalidixic acid** | EUCAST | 16 | | 32 | 4 | 64 | | | | |
| **Sulfonamides** | **Sulfonamide** | EUCAST | 256 | | 512 | 8 | 1024 | | | | |
| **Tetracyclines** | **Tetracyclin** | EUCAST | 8 | | 16 | 1 | 64 | | | | |
| **Trimethoprim** | **Trimethoprim** | EUCAST | 2 | | 4 | 0.5 | 32 | | | | |

# 2.2 CAMPYLOBACTERIOSIS

## 2.2.1 General evaluation of the national situation

### A. Thermophilic Campylobacter general evaluation

**History of the disease and/or infection in the country**

State Veterinary Administration (SVA) of the Czech republic launched monitoring for occurence of thermophilic Campylobacter in poultry in the year 2005. This monitoring was also carried out in 2006, 2007 and 2008. Its chief aim is the monitoring of thermophilic Campylobacter incidence and their antibiotic resistance. The cloacal swabs of broilers were taken at the slaughterhouses in 2006 and 2007. The caecum samples and carcasses of broilers were taken at the slaughterhouses in 2008.The slaughterhouses were selected so that the entire area of the Czech Republic was covered, if possible. To deal with seasonal prevalence, samples were collected in slaughterhouses monthly throughout the entire calendar year. The partner of the Communitary Reference Laboratory in Uppsala is the State Veterinary Institute Olomouc.

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

Last year there was the slight decrease of campylobacteriosis in human population.

**Recent actions taken to control the zoonoses**

The monitoring of the prevalence and antibiotics resistance of thermotolerant Campylobacter spp. in broilers.

## 2.2.2 Campylobacteriosis in humans

### A. Thermophilic Campylobacter in humans

**Reporting system in place for the human cases**

Infectious diseases (all infections including parasitary) are notified on legal basis (20/1966, 258/2000.) Any physician is obliged to notify the diagnosed disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

**Case definition**

Clinical picture compatible with campylobacteriosis, e.g. diarrhoeal illness of variable severity.

**Notification system in place**

Infectious diseases (all infections including parasitary) are notified on legal basis. (20/1966, 258/2000) Any physician is obliged to notify the diagnosed disease and data are collected by the net of Regional Public Health Institutes with their district branch offices. The data are centrally collected and processed by the National Institute of Public health.

**History of the disease and/or infection in the country**

Campylobacter is routinely diagnosed only in recent years and we observe typical seasonal variation in its incidence. The increaing trend in incidence was partly due to spread of diagnostic in all country. Campylobacterioses have importance comparable with salmonelloses.

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

The highest increase in morbidity is recorded for the lowest age groups that is indicative of worsening conditions in food processing (particularly in households). Almost three fourts of cases were infected via poultry products.

## 2.2.3 Campylobacter in foodstuffs

### A. Thermophilic Campylobacter in Broiler meat and products thereof

**Monitoring system**

**Sampling strategy**

**At slaughterhouse and cutting plant**

**Frequency of the sampling**

**At slaughterhouse and cutting plant**

Once a month

**Type of specimen taken**

**At slaughterhouse and cutting plant**

Other: cloacal swabs

**Diagnostic/analytical methods used**

**At slaughterhouse and cutting plant**

Other: CSN EN ISO 10272-1:2006

**At meat processing plant**

Other: CSN EN ISO 10272-1:2006

**At retail**

Other: CSN EN ISO 10272-1:2006

**Preventive measures in place**

creation and control of HACCP and GHP system

**Control program/mechanisms**

**The control program/strategies in place**

The competent authority takes measures according to the legislation in force and defined cases are reported into the Rapid Alert System for Food and Feed. This is not valid for positive findings from cloacal swabs at slaughterhouses.

**Recent actions taken to control the zoonoses**

SVA and NIPH carry out monitoring and control programmes in the whole food chain and take appropriate measures according to the legislation in force to ensure safe foodstuffs.

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

In the case of positive results of the investigation the competent authority takes measures to prevent spreding of the infection to the food chain.This is not valid for positive findings from cloacal swabs at slaughterhouses (monitoring program).

**Notification system in place**

The positive result of the bacteriological test has to be reported to the appropriate Regional Veterinary Administrations (RVA)and the RVA has oblige to take appropriate measures. The positive results are reported to the RVA from laboratories which made the tests.

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

The prevalence of the Campylobacter in broiler meat and products thereof is low and the situation is stable and similar like in previous years.

## Table Campylobacter in poultry meat

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for thermophilic Campylobacter spp. | C. coli | C. jejuni | C. lari | C. upsaliensis | Thermophilic Campylobacter spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey** | NIPH | single | 10 g | 12 | 10 | 3 | 7 | | | |
| **Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked - at retail - Survey** | NIPH | single | 10 g | 12 | 6 | 2 | 4 | | | |
| **Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey** | NIPH | single | 10 g | 12 | 10 | 2 | 8 | | | |
| **Meat from rabbit - fresh - chilled - at retail - Survey** | NIPH | single | 10 g | 12 | 1 | 1 | | | | |
| **Meat from turkey - meat preparation - intended to be eaten cooked - at retail - Survey** | NIPH | single | 10 g | 12 | 4 | | 4 | | | |

## Table Campylobacter in other food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for thermophilic Campylobacter spp. | C. coli | C. jejuni | C. lari | C. upsaliensis | Thermophilic Campylobacter spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fish - at processing plant - Survey (chilled fish)** | NIPH | single | 10 g | 24 | 1 | 1 | | | | |
| **Meat from pig - offal - chilled - at retail - Survey (pork liver)** | NIPH | single | 10 g | 12 | 6 | 4 | 2 | | | |

## 2.2.4 Campylobacter in animals

### A. Thermophilic Campylobacter in Gallus gallus

**Monitoring system**

**Sampling strategy**

Since September 2005 the State Veterinary Administration (SVA) in the Czech Republic has introduced monitoring of thermophilic Campylobacter in poultry. Monitoring was also carried out in 2006, 2007 and 2008 too. Samples are taken at slaughterhouses from poultry at random. Sampling is done by official veterinarian every month. Ten caecum samples and one carcass are taken at slaughterhouses. The samples are put into plastic bags. One slaughter batch equals 10 caecums and one carcass. After collecting the samples, they are kept chilled and they are sent to the accredited laboratories of the State Veterinary Institutes within 24 hours.

Monitoring system follows the Commission Decision 2007/516/EC and Methodology Instruction of SVA.

**Frequency of the sampling**

**At slaughter**

Once a month

**Type of specimen taken**

**At slaughter**

Caecum and carcass

**Methods of sampling (description of sampling techniques)**

**At slaughter**

Samples are taken at slaughterhouses at random. Caecum and carcass were taken. Samples are cooled and delivered to lab within 24 hours. Sampling is done by official veterinarian every month throughout the entire calendar year.

Monitoring system follows the Commission Decision 2007/516/EC and Methodology Instruction of SVA. The slaughterhouses were selected so that the entire area of the Czech Republic was covered, if possible.

**Case definition**

**At slaughter**

Positive result of the bacteriological test.

**Diagnostic/analytical methods used**

**At slaughter**

CSN EN ISO 10272-1:2006, CSN EN ISO 10272-2:2006 and Commission Decision 2007/516/EC

**Notification system in place**

The official laboratory (State Veterinary Institute) notifies the possitive sample to RVA.

**Results of the investigation**

Investigation is performed in state laboratories accredited in accordance with CSN ISO EN 17025:2005. Investigation results are sent in the form of lab test report to the SVA.

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

The prevalence of termophilic Campylobacter in broilers´caecum in 2008 was 61 % and the prevalence in broilers´carcasses was 70%.

## Table Campylobacter in animals

| | Source of information | Sampling unit | Units tested | Total units positive for thermophilic Campylobacter spp. | C. coli | C. jejuni | C. lari | C. upsaliensis | Thermophilic Campylobacter spp., unspecified |
|---|---|---|---|---|---|---|---|---|---|
| **Gallus gallus (fowl) - broilers - - neck skin** | SVA | single | 422 | 295 | 44 | 226 | | | 25 |
| **Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - caecum** | SVA | batch | 422 | 258 | 41 | 199 | | | 18 |

## Footnote:

Thermophilic Campylobacter spp., unspecified means the dual detection (C.jejuni and C. coli together)

## 2.2.5 Antimicrobial resistance in Campylobacter isolates

### A. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

#### Sampling strategy used in monitoring

**Frequency of the sampling**

Antimicrobial Resistance in Campylobacter is a part of monitoring described above in chapter Thermophilic Campylobacter in Gallus gallus - Sampling strategy. In strains C. jejuni and C.coli isolated from pooled samples of caecum taken at slaughterhouses, the investigation of antimicrobial resistance is carried out.

**Type of specimen taken**

Isolates of C. jejuni and C. coli were tested by the microdilution method for resistance to selected antimicrobial agents. Due to the overwhelming majority of C. jejuni isolates, resistance in this species is being reported only.

**Methods of sampling (description of sampling techniques)**

See chapter Thermophilic Campylobacter in Gallus gallus- Monitoring system, Sampling strategy.

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

For Antimicrobial Resistance testing , strains isolated during the Campylobacter monitoring in slaughterhouse poultry are used - see chapter Thermophilic Campylobacter in Gallus gallus- Monitoring system, Sampling strategy.

**Methods used for collecting data**

Isolated strains of thermophilic Campylobacter are collected and sent to the only state laboratory, where they are centrally investigated for antimicrobial resistance. The monitoring of antibiotics resistance was carried out only by the State Veterinary Institute Olomouc (National Reference Laboratory for Campylobacter).

#### Laboratory methodology used for identification of the microbial isolates

Bacteriological examination was in accordance with the ISO 10272-1:2006, ISO 10272-2:2006 standard and Commission Decision 2007/516/EC. To confirm suspected isolates, the PCR methods described by Ertas and Lund (Ertas et al., 2002, Lund et al., 2004) and a commercial real-time PCR kit (Taq Man Campylobacter spp. Kit, Applied Biosystems) were utilized. For quality control, the C. jejuni ATCC 33560 reference strain was used.

#### Laboratory used for detection for resistance

**Antimicrobials included in monitoring**

In 133 C. jejuni isolates detected in 2008, resistance to selected antimicrobial agents was tested by the microdilution method. The results of isolate testing carried out in 2008 are presented as in that year, the criteria for monitoring of

antibiotic resistance of thermotolerant Campylobacter spp. in poultry defined by Commission Decision 2007/516/EC were first applied.
In C. jejuni isolates, resistance to 8 selected antibiotics (ATB) was tested. The first 5 ATB (erythromycin, ciprofloxacin, tetracycline, streptomycin and gentamicin) are specified in Commission Decision 2007/516/EC for monitoring of antibiotic resistance in poultry. Advised optimum concentration range to be tested for each ATB in mg/L were recommended by The EFSA Journal (EFSA 2007). The cut-off values (mg/L) were also specified by the above-mentioned Commission Decision 2007/516/EC. Beyond the scope of the EC recommendations, chloramphenicol, ampicillin and oxolinic acid were tested as well. In these three ATB, the cut-off values (mg/L) were based on the parameters published in Communique 2005. Quality of the plates was tested at regular intervals with the C. jejuni ATCC 33560 reference strain.

**Breakpoints used in testing**

The breakpoints (mg/L) were also specified by the above-mentioned Commission Decision 2007/516/EC.

**Notification system in place**

The results of the antibiotics resistance of the isolates were notified to the SVA.

**Results of the investigation**

The highest resistance detected was to quinolone antibiotics. Resistance to oxolinic acid was 58.6% in isolates, to ciprofloxacin 56.4% in isolates, to ampicillin 18%. Moreover, 3% of animal isolates demonstrated resistance to streptomycin. In erythromycin, resistance was not detected.

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

| C. jejuni | | Gallus gallus (fowl) - broilers - unspecified - at slaughterhouse - animal sample - caecum - Monitoring - official sampling - objective sampling | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | | | | | | | | | | | | | | | | | | | |
| Number of isolates available in the laboratory | | 133 | | | | | | | | | | | | | | | | | | | | | | | |
| **Antimicrobials:** | | break points | N | n | <=0.008 | 0.015 | 0.03 | 0.06 | 0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | 1024 | 2048 | >2048 | lowest | highest |
| **Aminoglycosides** | **Gentamicin** | 1 | 133 | 0 | | 3 | 9 | 26 | 60 | 24 | 9 | 2 | | | | | | | | | | | | | |
| **Fluoroquinolones** | **Ciprofloxacin** | 1 | 133 | 75 | | | 6 | 23 | 20 | 6 | 1 | 2 | 3 | 2 | 11 | 28 | 16 | 12 | 3 | | | | | | | |
| **Macrolides** | **Erythromycin** | 4 | 133 | 0 | | | | 3 | 120 | 7 | | 2 | 1 | | | | | | | | | | | | |
| **Penicillins** | **Ampicillin** | 4 | 133 | 24 | | | 2 | 5 | 2 | 11 | 21 | 26 | 20 | 22 | 13 | 6 | 3 | 2 | | | | | | | | |
| **Quinolones** | **Nalidixic acid** | 8 | 133 | 78 | | | | | | | 10 | 16 | 24 | 4 | 1 | 3 | 1 | 3 | 42 | 29 | | | | | | |
| **Tetracyclines** | **Tetracyclin** | 2 | 133 | 10 | | | | 26 | 74 | 16 | 3 | 4 | | 2 | 2 | 2 | 2 | 2 | | | | | | | | |

# Table Antimicrobial susceptibility testing of Campylobacter in animals

| **Campylobacter spp., unspecified** | | **Gallus gallus (fowl)** | | **Cattle (bovine animals)** | | **Pigs** | |
|---|---|---|---|---|---|---|---|
| Isolates out of a monitoring program (yes/no) | | yes | | | | | |
| Number of isolates available in the laboratory | | 133 | | | | | |
| **Antimicrobials:** | | N | n | N | n | N | n |
| Aminoglycosides | Gentamicin | 133 | 0 | | | | |
| Fluoroquinolones | Ciprofloxacin | 133 | 75 | | | | |
| Macrolides | Erythromycin | 133 | 0 | | | | |
| Penicillins | Ampicillin | 133 | 24 | | | | |
| Quinolones | Nalidixic acid | 133 | 78 | | | | |
| Resistant to 1 antimicrobial | Resistant to 1 antimicrobial | 133 | 20 | | | | |
| Resistant to 2 antimicrobials | Resistant to 2 antimicrobials | 133 | 58 | | | | |
| Resistant to 3 antimicrobials | Resistant to 3 antimicrobials | 133 | 13 | | | | |
| Resistant to 4 antimicrobials | Resistant to 4 antimicrobials | 133 | 4 | | | | |
| Resistant to >4 antimicrobials | Resistant to >4 antimicrobials | 133 | 0 | | | | |
| Tetracyclines | Tetracyclin | 133 | 10 | | | | |

## Footnote:

Campylobacter jejuni

## Table Breakpoints used for antimicrobial susceptibility testing

| Test Method Used | |
|---|---|
| Disc diffusion | ○ |
| Agar dilution | ○ |
| Broth dilution | ◉ |
| E-test | ○ |

| Standards used for testing |
|---|
| EFSA,_Communique_2005 |

| | | | Breakpoint concentration (microg/ml) | | | Range tested<br/>concentration (microg/ml) | | Disk content | Breakpoint Zone diameter (mm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Standard for breakpoint | Susceptible <= | Intermediate | Resistant > | lowest | highest | microg | Susceptible >= | Intermediate | Resistant <= |
| **Aminoglycosides** | **Gentamicin** | EFSA | 1 | | 1 | 0.03 | 64 | | | | |
| **Fluoroquinolones** | **Ciprofloxacin** | EFSA | 1 | | 1 | 0.03 | 64 | | | | |
| **Macrolides** | **Erythromycin** | EFSA | 4 | | 4 | 0.125 | 256 | | | | |
| **Penicillins** | **Ampicillin** | Communique | 4 | | 4 | 0.01 | 32 | | | | |
| **Quinolones** | **Nalidixic acid** | Communique 2005 | 8 | | 8 | 0.5 | 64 | | | | |
| **Tetracyclines** | **Tetracyclin** | EFSA | 2 | | 2 | 0.03 | 64 | | | | |

# 2.3 LISTERIOSIS

## 2.3.1 General evaluation of the national situation

### A. Listeriosis general evaluation

**History of the disease and/or infection in the country**

There is no official National program for monitoring of Listeriosis at animals. Czech Agriculture and Food Inspection Authority performed control at retail. Findings in human population were not sporadic in the last year.
State Veterinary Administration carry out monitoring of listeriosis in foodstuffs of animal origin in food producing establishments in accordance with Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs.

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

Trends keep changing. During the last year the increased occurence of findings recorded - i.e. Listeria monocytogenes in foodstuffs of animal origin where the food is the main source of infection.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There are relevancies of the findings in foodstuffs as a source of infection to human cases. Sources of infection are just foodstuffs of animal origin.

**Additional information**

In accordance with Regulation (EC) 2073/2005 in 2006 was puting into practice the bacteriological detection of Listeria monocytogenes performed by State Veterinary Administration. The investigation was made by the detection method, this method is more sensible than the enumeration method. For presence or absence L. monocytogenes in 25 g is using EN/ISO 11290-1.

## 2.3.2 Listeriosis in humans

## 2.3.3 Listeria in foodstuffs

**A. L. monocytogenes in food - Other food - at retail - official food or feed controls - random sampling**

**Monitoring system**

**Sampling strategy**

CAFIA performed control at retail according to Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU regulation No. 1441/2007).
Samples were collected by competent authority as part of an official sampling from all 14 regions of the Czech Republic within a year by the inspectors from the Regional inspectorates and analysed in designated laboratories for analysis samples taken during official controls (Article 12, Regulation (EC) No 882/2004). The sampling by CAFIA was random. However, in case of consumer complaints was the sampling targeted.

**Frequency of the sampling**

**At the production plant**

Other: depend on the HACCP and on the survey

**At retail**

Sampling distributed evenly throughout the year

**Type of specimen taken**

**At the production plant**

Raw materials and final products.

**At retail**

Final products.

**Methods of sampling (description of sampling techniques)**

**At the production plant**

Final products must be placed asepticaly into a sample container and transfer to the laboratory. The number of subsamples have been taken in accordance with Regulation (EC) No 2073/2005.

**At retail**

Final product of one hundred grams minimum each is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. The numbers of subsamples were taken in particular food categories according to a sampling plan which is given to the Chapter 1 Food safety criteria of commission Regulation (EC) No 2073/2005:
Sampling plan n=5 for ready-to-eat foods able or unable to support the growth

of L. monocytogenes, other than those intended for infants and for special medical purposes was taken;

Sampling plan n=10 for ready-to-eat foods intended for infants was taken.

**Definition of positive finding**

**At the production plant**

The positive batch means the presence L. monocytogenes in 25 g only in one of all subsamples.

**At retail**

A batch was considered to be positive where L. monocytogenes has been isolated in amount more than 100 CFU in 1g from at least one subsample taken out of the batch.

**Diagnostic/analytical methods used**

**At the production plant**

Bacteriological method: ISO 11290- parts 1 and 2:1996, 1998

**At retail**

Bacteriological method: ISO 11290- parts 1 and 2:1996, 1998

**Preventive measures in place**

Controls of HACCP,GMP and GHP systems

**Control program/mechanisms**

**The control program/strategies in place**

The control programmes/ strategies in place: check of records and documents within the HACCP system

**Measures in case of the positive findings**

On the basis of positive finding, the whole batch is recalled from circulation. A fine is imposed on the food business operator and he is ordered to remove the causes and to take such measures that would prevent recurrence of pathogens.

## Table Listeria monocytogenes in milk and dairy products

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 5676 | 61 | 3523 | 61 | 2153 | 0 | 0 |
| **Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 6 | 0 | | | 6 | 0 | 0 |
| **Cheeses made from cows' milk - hard - made from pasteurised milk - at retail - Survey** | NIPH | single | 25 g | 24 | 0 | 24 | 0 | 24 | 0 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 4595 | 72 | 2423 | 63 | 2172 | 0 | 9 |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 88 | 0 | | | 88 | 0 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Survey** | NIPH | single | 25 g | 36 | 0 | 36 | 0 | 36 | 0 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 71 | 0 | 31 | 0 | 40 | 0 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 23 | 0 | | | 23 | 0 | 0 |
| **Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 216 | 0 | 191 | 0 | 25 | 0 | 0 |
| **Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 71 | 0 | 31 | 0 | 40 | 0 | 0 |
| **Cheeses made from sheep's milk - soft and semi -soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 20 | 0 | 20 | 0 | | | |

## Table Listeria monocytogenes in milk and dairy products

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cheeses made from sheep's milk - soft and semi -soft - made from raw or low heat-treated milk - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 2 | 0 | | | 2 | 0 | 0 |
| **Dairy products (excluding cheeses) - butter - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 56 | 0 | 56 | 0 | | | |
| **Dairy products (excluding cheeses) - butter - at retail - Survey** | NIPH | single | 25 g | 12 | 0 | 12 | 0 | 12 | 0 | 0 |
| **Dairy products (excluding cheeses) - cream - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 42 | 0 | 31 | 0 | 11 | 0 | 0 |
| **Dairy products (excluding cheeses) - fermented dairy products - at retail - Survey (Buttermilk)** | NIPH | single | 25 g | 12 | 0 | 12 | 0 | 12 | 0 | 0 |
| **Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - at processing plant - Surveillance - official controls** | SVA | batch | 25 ml | 73 | 5 | 73 | 5 | 0 | | |
| **Milk, goats' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - at processing plant - Surveillance - official controls** | SVA | batch | 25 ml | 11 | 0 | 6 | 0 | 5 | 0 | 0 |

## Table Listeria monocytogenes in other foods

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fish - gravad /slightly salted - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 6 | 0 | 0 | | 6 | 0 | 0 |
| **Fish - marinated - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 26 | 0 | 0 | | 26 | 0 | 0 |
| **Fish - raw - frozen - at retail - Survey** | NIPH | single | 25 g | 24 | 1 | 24 | 1 | 0 | | |
| **Fish - smoked - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 478 | 18 | 277 | 18 | 201 | 0 | 0 |
| **Fish - smoked - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 15 | 0 | 0 | | 15 | 0 | 0 |
| **Fish - smoked - at retail - Survey** | NIPH | single | 25 g | 12 | 1 | 12 | 1 | 12 | 1 | 0 |
| **Fruits - at retail - Survey** | NIPH | single | 25 g | 23 | 0 | 23 | 0 | 23 | 0 | 0 |
| **Fruits - pre-cut - ready-to-eat - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 5 | 0 | 0 | | 5 | 0 | 0 |
| **Fruits - pre-cut - ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 10 | 0 | 0 | | 10 | 0 | 0 |
| **Infant formula - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 50 | 0 | 50 | 0 | 0 | | |
| **Meat from bovine animals - fresh - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 144 | 0 | 144 | 0 | | | |
| **Meat from bovine animals - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 6700 | 138 | 5975 | 130 | 725 | 0 | 8 |
| **Meat from broilers (Gallus gallus) - carcass - spent hens - at retail - Survey** | NIPH | single | 25 g | 12 | 3 | 12 | 3 | 0 | | |
| **Meat from broilers (Gallus gallus) - fresh - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 335 | 5 | 300 | 5 | 35 | 0 | 0 |

## Table Listeria monocytogenes in other foods

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 439 | 8 | 399 | 8 | 40 | 0 | 0 |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 12 | 0 | 0 | | 12 | 0 | 0 |
| **Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - at retail - Survey** | NIPH | single | 25 g | 36 | 0 | 36 | 0 | 36 | 0 | 0 |
| **Meat from broilers (Gallus gallus) - offal - unspecified - at retail - Survey** | NIPH | single | 25 g | 12 | 2 | 12 | 2 | 0 | | |
| **Meat from pig - fresh - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 156 | 13 | 156 | 13 | 0 | | |
| **Meat from pig - meat products - cooked, ready-to-eat - at processing plant - Surveillance - official controls** | SVA | batch | 25 g | 8401 | 120 | 6355 | 119 | 2046 | 0 | 1 |
| **Meat from pig - meat products - cooked, ready-to-eat - at retail - Survey** | NIPH | single | 25 g | 60 | 2 | 60 | 2 | 60 | 2 | 0 |
| **Meat from pig - offal - Frozen vegetables - at retail - Survey** | NIPH | single | 25 g | 36 | 3 | 36 | 25 | 0 | | |
| **Meat from pig - offal - liver - at retail - Survey** | NIPH | single | 25 g | 12 | 1 | 12 | 1 | 0 | | |
| **Meat from rabbit - fresh - chilled - at retail - Survey** | NIPH | single | 25 g | 12 | 1 | 12 | 1 | 0 | | |
| **Meat from turkey - fresh - chilled - at retail - Survey** | NIPH | single | 25 g | 12 | 2 | 12 | 2 | 0 | | |
| **Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 83 | 0 | 0 | | 83 | 0 | 0 |
| **Meat, mixed meat - meat products - cooked, ready-to-eat - at retail - Survey** | NIPH | single | 25 g | 84 | 5 | 84 | 5 | 84 | 5 | 0 |

## Table Listeria monocytogenes in other foods

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Meat, mixed meat - meat products - fermented sausages - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 13 | 0 | 0 | | 13 | 0 | 0 |
| **Meat, mixed meat - meat products - fermented sausages - at retail - Survey** | NIPH | single | 25 g | 24 | 2 | 24 | 2 | 24 | 2 | 0 |
| **Meat, mixed meat - meat products - raw but intended to be eaten cooked - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 6 | 0 | 0 | | 6 | 0 | 0 |
| **Meat, mixed meat - minced meat - at retail - Survey (50% pork meat + 50% beef meat)** | NIPH | single | 25 g | 12 | 0 | 12 | 0 | 0 | | |
| **Ready-to-eat salads - at retail - Survey** | NIPH | single | 25 g | 24 | 0 | 24 | 0 | 24 | 0 | 0 |
| **Ready-to-eat salads - containing mayonnaise - at processing plant - Surveillance** | SVA | batch | 25 g | 1121 | 46 | 553 | 46 | 568 | 0 | 0 |
| **Ready-to-eat salads - containing mayonnaise - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 411 | 20 | 95 | 18 | 316 | 0 | 2 |
| **Ready-to-eat salads - containing mayonnaise - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 86 | 0 | 0 | | 86 | 0 | 0 |
| **Sauce and dressings - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 6 | 0 | 0 | | 6 | 0 | 0 |
| **Sweets - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 117 | 0 | 2 | 25 | 115 | 0 | 0 |
| **Sweets - at processing plant - Survey** | NIPH | single | 25 g | 36 | 1 | 36 | 1 | 36 | 1 | 0 |
| **Sweets - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 12 | 0 | 0 | | 12 | 0 | 0 |
| **Vegetables - at processing plant - Surveillance** | SVA | batch | 25 g | 224 | 4 | 81 | 4 | 143 | 0 | 0 |
| **Vegetables - non-precut - at retail - Survey** | NIPH | single | 25 g | 84 | 1 | 84 | 1 | 84 | 1 | 0 |
| **Vegetables - pre-cut - ready-to-eat - at processing plant - Surveillance - official controls** | CAFIA | batch | 25 g | 27 | 0 | 0 | | 27 | 0 | 0 |

## Table Listeria monocytogenes in other foods

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but <= 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|---|---|---|---|---|---|---|---|---|---|
| **Vegetables - pre-cut - ready-to-eat - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 13 | 0 | 0 | | 13 | 0 | 0 |

# 2.4 E. COLI INFECTIONS

## 2.4.1 General evaluation of the national situation

### A. Verotoxigenic Escherichia coli infections general evaluation

**History of the disease and/or infection in the country**

Occurence of the zoonotic agent and/or disease is sporadic and in human there was no clinical case of the disease.

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

In the year 2008 was no positive finding from foodstuffs.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There was no relevance between finding in animals and foodtuffs to human .

**Recent actions taken to control the zoonoses**

Sampling for monitoring of VT E. coli is performed at slaughterhouses during July and August. The samples have been taken from carcass swabs of pig and bovine animals. Swabs were taken from 4 places on the carcass. The area of the swab is 100 cm2. Samples are tested in state veterinary institutes.

**Additional information**

The horizontal method for the detection of Escherichia coli O157 (ISO 16654:2001) was used for testing of samples of food for VTEC in routine diagnostic laboratories. Suspected isolates were tested in the national reference laboratory. The isolates were tested for somatic O-antigen by agglutination and for genetic cod for VT production and intimin production by PCR. Somatic O-antigens were tested for more frequent serogroups by 70 O-antisera. Antisera O157, O26, O91, O103, O113, O121, O128, O69, O71, O116, O139, O141, O142, O147, O153, O156 and others were used.

The VTEC isolates from animals were randomly detected from sick or dead animals.

## 2.4.2 E. coli infections in humans

## 2.4.3 Escherichia coli, pathogenic in foodstuffs

**Table VT E. coli in food**

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Verotoxigenic E. coli (VTEC) | Verotoxigenic E. coli (VTEC)-VTEC O157 | Verotoxigenic E. coli (VTEC)-VTEC non-O157 | Verotoxigenic E. coli (VTEC)-VTEC, unspecified |
|---|---|---|---|---|---|---|---|---|
| **Dairy products (excluding cheeses) - dairy products, not specified - at processing plant - Surveillance** | SVA | batch | 25 g | 27 | 0 | | | |
| **Egg products - at processing plant - Surveillance** | SVA | batch | 25 g | 1 | 0 | | | |
| **Fishery products, unspecified - at processing plant - Surveillance** | SVA | batch | 25 g | 5 | 0 | | | |
| **Fruits - at cutting plant - Surveillance - official controls** | SVA | batch | 25 g | 1 | 0 | | | |
| **Meat from bovine animals - fresh - at slaughterhouse - Monitoring - official sampling (swabs (100 cm2))** | SVA | batch | 25 g | 516 | 0 | | | |
| **Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Surveillance - official controls** | SVA | batch | 25 g | 20 | 0 | | | |
| **Meat from pig - fresh - at slaughterhouse - Monitoring - official sampling (swabs (100 cm2))** | SVA | batch | 25 g | 648 | 0 | | | |
| **Milk, cows' - raw - intended for direct human consumption - - milk - Surveillance - official controls** | SVA | batch | 25 g | 20 | 0 | | | |
| **Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - at processing plant - domestic production - Surveillance - official controls** | SVA | batch | 25 g | 2 | 0 | | | |
| **Other products of animal origin - at processing plant - Surveillance** | SVA | batch | 25 g | 103 | 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 |
|---|---|---|---|---|---|---|---|---|
| **Vegetables - at cutting plant - Surveillance - official controls** | SVA | batch | 25 g | 10 | 0 | | | |

### 2.4.4 Escherichia coli, pathogenic in animals

## 2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

### 2.5.1 General evaluation of the national situation

**A. Tuberculosis general evaluation**

**History of the disease and/or infection in the country**

Elimination of bovine tuberculosis caused by M. bovis was successfully completed in the CR by eradicatoin and control programme in 1968.

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

The whole territory of the Czech Republic is declared officially free of tuberculosis as regards bovine herds in accordance with Commission decision 2004/320/EC of 31 March 2004. There is no relevance between TBC in human and TBC in animals.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There is no relevance between findings in animals, feedingstuffs and foodstuffs to human causes because since 1968 the Czech Republic is free from Bovine tuberculosis (M. bovis).

**Recent actions taken to control the zoonoses**

In animals - simple skin test
- before remove all shemales older than 24 months
- all imported shemales (except sloughtering animals) older than 6 weeks and breeding bulls from third countries
- all removed shemales (except sloughtering animals) older than 6 weeks and breeding bulls from Member States, which have not status of free country
- all breeding bulls

## 2.5.2 Tuberculosis, mycobacterial diseases in humans

### A. Tuberculosis due to Mycobacterium bovis in humans

**Reporting system in place for the human cases**

Register of tuberculosis notifies clinical reports and laboratory reports of tuberculosis and mycobacterioses.

**Diagnostic/analytical methods used**

Laboratory microscopy and cultivation methods of identification are used. Only cultivation proof is considered as valid microbiological proof.

**Notification system in place**

Tuberculosis is obligatory notified disease since the begining of the 20th century. The most recent system contains two branchesÂ´ Register of tuberculosis - physicianÂ´s reports based register and laboratory reports of positive findings based system. Both are merged into one system with unique identification number.

**History of the disease and/or infection in the country**

Tuberculosis caused by M. tuberculosis is declining for several years after ten-years stagnation. CR is considered as low endemicity country.

After successful elimination of tuberculosis due to M. bovis in animals, we notify only very sporadic cases of identification of M. bovis in humans. Bacteriological finding of M. bovis in humans must be considered very cautiously.

## 2.5.3 Mycobacterium in animals

### A. Mycobacterium bovis in bovine animals

**Status as officially free of bovine tuberculosis during the reporting year**

**The entire country free**

The Czech Republic is free of Bovine tuberculosis caused by M. bovis since 1967 on the national level and from 2004 is declared as officially free in accordance with EU legislation on the base of Commission Decision 2004/320/EC.

**Free regions**

The whole territory of the Czech Republic is declared as officially free of tuberculosis (M. bovis) in relation to bovine herds.

**Additional information**

During the reporting year 2008 there was no occurrence and/or outbreak of bovine tuberculosis caused by Mycobacterium bovis in bovine animals.

**Monitoring system**

**Sampling strategy**

The sampling strategy and monitoring system is in accordance with Directive 64/432/EEC as amended.

**Frequency of the sampling**

Tuberculosis “ Alergenodiagnosis“ simple intradermal test (antigen "Bovitubal" M. bovis 28 000 IU)
Data of the last skin test must be checked prior to skin test in order to observe specified time period between individual examinations.

a) animals moved for further keeping in the Czech Republic “ examination of female animals over 24 months of age one month prior to the first movement 1x per year. The term movement means: outside the territory of a region
b) animals imported from third countries (excluding slaughter animals) examination of female animals over 6 weeks of age and breeding bulls. The examination must be carried out as soon as possible after arrival of animals to the place of destination with respect to eventual previous tuberculin test;
c) animals moved from Member States not having status of bovine tuberculosis officially free country or region (excluding slaughter animals)and examination of female animals over 6 weeks of age and breeding bulls. The examination must be carried out as soon as possible after arrival of animals to the place of destination with respect to eventual previous tuberculin test;
d) breeding bulls in BBRH examination within 28 days prior to basic selection;
e) breeding bulls prior to admission to semen collection centres examination in accordance with Annex 2 to Decree No. 380/2003;

f) breeding bulls in semen collection centres 1x per year examination in accordance with Annex 2 to Decree No. 380/2003.

**Type of specimen taken**

Other: skin test

**Methods of sampling (description of sampling techniques)**

The place of antigen application is situated at the border of the anterior and middle thirds of the neck. The skin must be without pathological changes, equally thick with the possibility of an easy cutaneous drape formation. The place of tuberculin administration is perfectly cut and cleaned. The cutaneous drape is formed with the thumb and the point finger and its thickness is after cutimetre measuring recorded. The dosage of 0.1 ml of tuberculin is applicated by means of a short sterile needle, bevel edge outwards, with graduated syringe charged with tuberculin, inserted obliquely into the deepest layers of the skin. The right reaction after intradermal administration - the papula formation in the place of allergen inoculation - must be detected by palpation. If the tuberculin was not administered intradermally, it is possible to repeat the administration in the same place in the prescribed dosage. If the skin is injured during cutting or if skin changes are determined before tuberculin administration, it is necessary to inoculate tuberculin on another place of the same neck side. The origin place is cancelled with the hair cut.

**Case definition**

Negative reaction: If there is apparent only bordered swelling with the cutaneous drape strengthening of max. 2 mm without clinical symptoms as diffusion or large swelling, exudation, necrosis, painfulness or inflammation reaction of the corresponding lymphatic vessels or lymphatic nodes. Dubious reaction: If there is apparent no clinical symptom stated in item a) but the cutaneous drape strengthening is higher than 2 mm but lower than 4 mm. Positive reaction: If there are apparent clinical symptoms stated in item a) or the cutaneous drape in the place of application is thicker by 4 mm or more.

**Diagnostic/analytical methods used**

Simple skin test has been performed with tuberculin BOVITUBAL 28000 IU/ml (Bioveta, CZ) which contains tuberculin protein from Mycobacterium bovis (strain AN 5). The dose for one animal is 0,1ml. The diagnostic method is in accordance with recommendation OIE.

## Vaccination policy

Vaccination is strictly prohibited.

## Other preventive measures than vaccination in place

All slaughtered bovine animals were under veterinary control. The official post mortem veterinary examination is carry out in slaughterhouses by the official veterinarian in accordance with EU legislation.

## Control program/mechanisms

### The control program/strategies in place

The control of bovine tuberculosis is performing in accordance with 64/432/EC as amended.

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

In the case of positive results of examination the appropriate RVA issued extraordinary veterinary measures in accordance with Veterinary Act (CZ legislation) and EU legislation.

### Notification system in place

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

### Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

In the Czech Republic bovine tuberculosis was suppressed in frame of the nationwide sanitation program (1959 - 1968) on 10 October 1968. The post-eradication period (1969 - 1999) was characterized by the extinction of reservoir sources. Currently only the sporadic cases of the bovine tuberculosis incidence have been recorded. In 1981, 1987 to 1990, 1993 and 1996 any bovine tuberculosis incidence was not found. Thereat in other years, from 1980 to 1995, at the most three outbreaks of tuberculosis ever appeared in cattle. The participation of the infected animals in individual stocks was very low and never exceeded 5 to 10% of animals. In 1970 to 1995 the Mycobacterium bovis infection was also diagnosed in other 119 animals (zoological gardens, nature, small breedins) and in ten milk specimens. By course of the O.I.E. (International Animal Health Code,chapter 3.2.3.) definition the territory of the Czech Republic is free from bovine tuberculosis (the prevalence up to 0,2% of infected cattle stocks).

## Relevance of the findings in animals to findings in foodstuffs and to human cases

There is no relevance because we have no case of TBC (M. bovis).

## Additional information

In 2002 were tested 391 274 animals by single tuberculin test examination (11 positive) and 1 350 animals by simultaneous tuberculin test examination (10 positive). All positive reactions were investigated for M. bovis with negative result.
In 2003 were tested 374 625 animals by single tuberculin test examination (1 positive) and 1 730 animals by simultaneous tuberculin test examination. All positive reactions were investigated for M. bovis with negative result.
In 2004 were tested 322 494 animals by single tuberculin test examination (29

positive) and 12 124 animals by simultaneous tuberculin test examination. All positive reactions were investigated for M. bovis with negative result.
In the 2005 were tested 5659 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 14. All this lesions were detected as negative.
In the 2006 were tested 5081 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 12. All this lesions were detected as negative.
In the 2007 were tested 6939 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 9. All this lesions were detected as negative.
In the 2008 were tested 7037 animals by single tuberculin test examination without positive results. Number of animals with suspicious lesions of tuberculosis were 6. All this lesions were detected as negative.

In frame of the health control paid by the state, bovine tuberculosis is currently monitored in the CR as follow: single tuberculin test examination, simultaneous tuberculin test examination, laboratory examination (section, histological investigation and bacteriological investigation), serological investigation.

## Table Tuberculosis in other animals

| | Source of information | Sampling unit | Units tested | Total units positive for Mycobacterium spp. | M. bovis | M. tuberculosis | Mycobacterium spp., unspecified |
|---|---|---|---|---|---|---|---|
| **Goats - at farm - Surveillance (Objective sampling)** | SVA | animal | 3014 | 0 | 0 | 0 | 0 |

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

| Region | Total number of existing bovine | | Officially free herds | | Infected herds | | Routine tuberculin testing | | Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/432/EEC) | Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations | Number of animals detected positive in bacteriological examination |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Herds | Animals | Number of herds | % | Number of herds | % | Interval between routine tuberculin tests | Number of animals tested | | | |
| CESKÁ REPUBLIKA | 21292 | 1443640 | 21291 | 100 | 0 | 0 | 5 | 7037 | 7037 | 6 | 0 |
| Total | 21292 | 1443640 | 21291 | 100.0 | 0 | 0.0 | 5 | 7037 | 7037 | 6 | 0 |
| Total - 1 | | | | | | | | | | | |

## Footnote:

simple tuberculin test
- before remove all shemales older than 24 months
- all imported shemales (except sloughtering animals) older than 6 weeks and breeding bulls from third countries
- all removed shemales (except sloughtering animals) older than 6 weeks and breeding bulls from Member States, which have not status of free country
all breeding bulls

# 2.6 BRUCELLOSIS

## 2.6.1 General evaluation of the national situation

### A. Brucellosis general evaluation

**History of the disease and/or infection in the country**

In 1964 the program for eradication and control of bovine brucellosis in cattle caused by B. abortus was successfully completed.
Ovine and caprine brucellosis caused by B. melitensis has never been occured in the Czech Republic.

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

The whole territory of the Czech Republic is declared officially free of brucelosis as regards bovine, sheep and goats herds in accordance with Commission decision 2004/320/EC of 31 March 2004.

## 2.6.2 Brucellosis in humans

### A. Brucellosis in humans

**Reporting system in place for the human cases**

Epidat, all regions in the Czech Republic

**Case definition**

EU case definition in use

**Notification system in place**

Notifiable diseases

**History of the disease and/or infection in the country**

Brucellosis in human is very rare disease.

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

Very rare disease and source of infection is abroad.

## 2.6.3 Brucella in animals

### A. Brucella abortus in bovine animals

**Status as officially free of bovine brucellosis during the reporting year**

**The entire country free**

The Czech Republic is free of bovine brucellosis since 1964 on the natinal level and since 2004 is the Czech Republic officially free of bivine brucelosis according to EU legislation. The officially free status is laid down in Commission Decision 2004/320/EC.

**Free regions**

The whole territory of the Czech Republic is declared as officially free of Bovine brucellosis regarding bovine herds.

**Additional information**

During the reporting year 2008 there was no occurrence and/or outbreak of bovine brucellosis on the whole territory of the Czech Republic.

**Monitoring system**

**Sampling strategy**

Samples are taken from:
1, All holdings of cattle, which do not supply milk to dairy - all animals from age 24 months, all breeding bulls, all abortion animals -blood samples.
2, All holdings of cattle, where is more than 100 heads, which supply milk to diary - all animals from age 24 months - blood samples.
3, Abortion foetuses in indicated caases.
4, All holdings of milk cows, where is less than 100 heads, which supply milk to diary - bulk milk samples

**Frequency of the sampling**

Sampling scheme:
a) breeding bulls in breeding bulls rearing house examination within 28 days prior to basic selection;
b) breeding bulls prior to admission to semen collection centres examination in accordance with Annex 2 to Decree No. 380/2003;
c) breeding bulls in semen collection centres 1x per year examination in accordance with Annex 2 to Decree No. 380/2003.
Brucellosis serological examination
a) all bovine holdings (herds) not delivering milk or not authorized to local sale of milk examination of all animals over 24 months of age and breeding bulls in natural matting 1x per year;
b) animals imported from third countries (excluding slaughter animals) examination of female animals over 24 months of age and breeding bulls. The

examination must be carried out at most 1 month after arrival of animals to the place of destination;
c) animals moved from Member States not having status of bovine brucellosis officially free country or region (excluding slaughter animals)  examination of female animals over 24 months of age and breeding bulls. The examination must be carried out at most 1 month after arrival of animals to the place of destination.

Brucellosis  serological examination(RBT or ELISA)  number of milking cows is recorded. Blood samples from all bovine holdings, where is more than 100 heads delivering milk to dairy plants or authorized to local sale of milk  examination of all animals older 24 moths 1x per year.

Brucellosis  examination of milk (ELISA)  number of milking cows is recorded. Bulk milk samples from all bovine holdings, where is less than 100 heads delivering milk to dairy plants or authorized to local sale of milk  examination 2x per year in interval of at least 3 months. The examination of 100 dairy cows at most.

Brucellosis
All aborting cows  examination 2x per year in interval of 21  28 days.

Brucellosis
Abortions and amnia examination in indicated cases.

**Type of specimen taken**

Other:  milk, blood,abortion foetus

**Case definition**

Positive laboratory investigation (serological or bacteriological).

**Diagnostic/analytical methods used**

The diagnostic methods are used in accordance with Directive 64/432/EEC, Regulation 2004/226/EEC. RBT, Complement fixation test, ELISA, slow agglutination.

## Vaccination policy

Vaccination is strictly prohibited.

## Other preventive measures than vaccination in place

Control of animals movement between regions and control of imported animals.

## Control program/mechanisms

**The control program/strategies in place**

Ministry of Agriculture of the Czech Republic determines main strategies in a veterinary care and carries out their control as laid down in the Veterinary Act No. 166/1999 Article 44, Point 1a. The Ministry of Agriculture specifies obligatory

preventive and diagnostics campaigns in accordance with the Veterinary Act, Article 44; Point 1d, based on the epidemiological situation. Related details are laid down in the Methodology of Animal Health Controls and Prophylaxis approved by the Ministry of Agriculture and issued in its Official Journal. According to the legislation (Veterinary Act 166/1999), the SVA CR (CCA) has the legal power to supervise any action ordered by the Methodology. Regional veterinary administrations execute the legal powers as to supervise private veterinarians over their actions in the professional field as ordered by the Methodology.

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

The measures are laid down in the Veterinary Act No 166/1999 and Decree 299/2003 in Accordance with 91/68/EEC.

**Notification system in place**

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

**Results of the investigation**

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

There was no outbreak of the disease in 2008.

**Relevance of the findings in animals to findings in foodstuffs and to human cases**

There are not relevancies of the findings to human cases as a source of infection.

## B. Brucella melitensis in sheep

### Status as officially free of ovine brucellosis during the reporting year

**The entire country free**

The Czech Republic is officialy free of ovine brucelosis in accordance with 320/2004/EC.

**Free regions**

All regions in The Czech republic are free of ovine brucelosis (B. melitensis) and the disease has never been found in the Czech Republic.

### Monitoring system

**Sampling strategy**

The sampling strategy was done by State Veterinary Administration in Methodology of control of animal health which is laid down in accordance with Veterinary Act No. 166/1999 as amended.

**Frequency of the sampling**

Ovine and caprine brucellosis (B. melitensis) LE CS (RBT + CFR)
Licensed breeding rams examination 1x per year in accordance with Annex 9 to Decree No. 380/2003.

Ovine and caprine brucellosis (B. melitensis) LE serological examination (RBT)
Holdings (herds) producing young breeding rams where performance checks are carried out examination 1x per year. Representative number of animals shall include:
a) all non-castrated male animals over 6 months of age;
b) 25% of female animals of reproduction age (sexually mature) or lactating examination of at least 50 female animals (all animals in holdings containing less than 50 animals);
c) all animals over 6 months of age introduced to the holding after the previous testing.

Ovine and caprine brucellosis (B. melitensis) LE CS (RBT + CFR)
Aborting ewes examination 2x in interval of 21 28 days.

Ovine and caprine brucellosis (B. melitensis) LE (A + BE)
Abortions or amnia examination in indicated cases.

**Type of specimen taken**

Other: blood and foetuses

**Methods of sampling (description of sampling techniques)**

The methods of sampling is in according with Annex of the Council Decision 90/242/EEC

**Case definition**

Positive laboratory investigation (serological or bacteriological).

**Diagnostic/analytical methods used**

The diagnostic method that are used in accordance with Annex of the Council Decision 90/242/EEC.

**Vaccination policy**

Vaccination is strictly prohibited.

**Other preventive measures than vaccination in place**

Control of animals movement between regions and control of imported animals.

**Control program/mechanisms**

**The control program/strategies in place**

The control program is laid down by State Veterinary Administration in Methodology of control health in accordance with Veterinary Act no. 166/1999 as amended.

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

The measures are laid down in Veterinary Act No. 166/199 sb. and Decree 299/2003 Sb in accordance with 91/68/EEC.

**Notification system in place**

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

**Results of the investigation**

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

In 2008 were tested all breeding rams once a year, all abortioned sheep two times in interval 21 -28 days and aborted foetuses and in holdings which produced young breeding rams were tested all rams 6 months old and 25 % adult sheep (min. 50 heads) once a year. 13 238 samples in sheep were tested for B. melitensis in year 2008 with negative results. Samples were tested by complement fixation test, RBT and slow agglutination.

**Relevance of the findings in animals to findings in foodstuffs and to human cases**

There are not relevancies of the findings to human cases as a source of infection.

## C. Brucella melitensis in goats

### Status as officially free of caprine brucellosis during the reporting year

**The entire country free**

The whole teritory of the Czech Republic is officially free of Sheep and goat brucelosis in accordance with Commision Decision No. 320/2004/EC.

**Free regions**

The all teritory of the Czech Republic is free of B. melitensis and B. melitensis has never been found in the Czech Republic.

### Monitoring system

**Sampling strategy**

The sampling strategy was done by State Veterinary Administration in Methodology of control of animal healts which is lay down in accordance with Veterinary Act No. 166/1999 as amended.

**Frequency of the sampling**

Caprine brucellosis (B. melitensis) LE CS (RBT + CFR)
Aborting goats examination 2x in interval of 21 28 days.

Caprine brucellosis (B. melitensis) LE CS (RBT + CFR)
Breeding goats in matting examination 1x per year in accordance with Annex 9 to Decree No. 380/2003.

Caprine brucellosis (B. melitensis) LE serological examination (RBT)
Holdings (herds) producing young breeding he-goats where performance checks are carried out examination 1x per year. Representative number of animals shall include:
a) all non-castrated male animals over 6 months of age;
b) 25% of female animals of reproduction age (sexually mature) or lactating examination of at least 50 female animals (all animals in holdings containing less than 50 animals);
c) all animals over 6 months of age introduced to the holding after the previous testing.

Caprine brucellosis (B. melitensis) LE (A + BE)
Abortions or amnia examination in indicated cases.

**Type of specimen taken**

Blood

**Methods of sampling (description of sampling techniques)**

The methods of sampling is in according with Annex of the Council Decision 90/242/EEC

**Case definition**

The sample is considered like positive in the case of positive laboratory examination.

#### Diagnostic/analytical methods used

The diagnostic methods were used in accordance with Directive 64/432/EEC and Regulation 2004/226/EEC. RBT, CFT, ELISA and slow agglutination.

### Vaccination policy

Vacination is strictly prohibited.

### Other preventive measures than vaccination in place

Control of animals movement between regions and control of imported animals.

### Control program/mechanisms

#### The control program/strategies in place

Ministry of Agriculture of the Czech Republic determines main strategies in a veterinary care and carries out their control as laid down in the Veterinary Act No. 166/1999 Article 44, Point 1a. The Ministry of Agriculture specifies obligatory preventive and diagnostics campaigns in accordance with the Veterinary Act, Article 44; Point 1d, based on the epidemiological situation. Related details are laid down in the Methodology of Animal Health Controls and Prophylaxis approved by the Ministry of Agriculture and issued in its Official Journal. According to the legislation (Veterinary Act 166/1999), the SVA CR (CCA) has the legal power to supervise any action ordered by the Methodology. Regional veterinary administrations execute the legal powers as to supervise private veterinarians over their actions in the professional field as ordered by the Methodology.

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

The measures are laid down in Veterinary Act No 166/1999 and Decree 299/2003 in accordance with 91/68/EEC.

### Notification system in place

Notification system is lay down by the Act No. 166/1999 on veterinary care and amending certain related laws (Veterinary Act), as amended.

### Results of the investigation

If the result of investigation is positive, the person responsible for the laboratory carrying out the examination, the person carrying out the examination or the owner of the animals shall notify the results to the competent authority.

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

The disease has never been recorded in the Czech Republic.
In 2008 were tested all breeding bucks once a year, all abortioned goats two times in interval 21 -28 days and aborted foetuses and in holdings which produced young breeding bucks were tested all bucks 6 months old and 25 % adult goats (min. 50 heads) once a year. 2832 samples in goats were tested for B. melitensis in year 2008 with negative results. Samples were tested by

complement fixation test, RBT and slow agglutination.

**Relevance of the findings in animals to findings in foodstuffs and to human cases**

There are not relevancies of the findings to human cases as a source of infection.

## Table Brucellosis in other animals

| | Source of information | Sampling unit | Units tested | Total units positive for Brucella spp. | B. abortus | B. melitensis | B. suis | Brucella spp., unspecified |
|---|---|---|---|---|---|---|---|---|
| **Dogs - pet animals - at farm - animal sample - Clinical investigations (suspected)** | SVA | animal | 60 | 0 | 0 | 0 | 0 | 0 |
| **Hares - from hunting - Monitoring (target)** | SVA | animal | 600 | 45 | 0 | 0 | 0 | 45 |
| **Pigs - at slaughterhouse - Monitoring (selective)** | SVA | animal | 122314 | 0 | 0 | 0 | 0 | 0 |
| **Solipeds, domestic - horses** | | animal | 11 | 0 | 0 | 0 | 0 | 0 |
| **Zoo animals, all - at zoo - Monitoring (target)** | SVA | animal | 1797 | 0 | 0 | 0 | 0 | 0 |

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

| Region | Total number of existing bovine | | Officially free herds | | Infected herds | | Surveillance | | | | | | Investigations of suspect cases | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Serological tests | | | Examination of bulk milk | | | Information about | | | Epidemiological investigation | | | | | |
| | Herds | Animals | Number of herds | % | Number of herds | % | Number of bovine herds tested | Number of animals tested | Number of infected herds | Number of bovine herds tested | Number of animals or pools tested | Number of infected herds | Number of notified abortions whatever cause | Number of isolations of Brucella infection | Number of abortions due to Brucella abortus | Number of animals tested with serological blood tests | Number of suspended herds | Number of positive animals | | Number of animals examined microbiologically | Number of animals positive microbiologically |
| | | | | | | | | | | | | | | | | | | Sero logically | BST | | |
| CESKÁ REPUBLIKA | 21292 | 1443640 | 21292 | 100 | 0 | 0 | 20842 | 544702 | 0 | 1682 | 201832 | 0 | 6581 | 0 | 0 | 201 | 3 | 6 | | 40 | 0 |
| Total | 21292 | 1443640 | 21292 | 100.0 | 0 | 0.0 | 20842 | 544702 | 0 | 1682 | 201832 | 0 | 6581 | 0 | 0 | 201 | 3 | 6 | 0 | 40 | 0 |
| Total - 1 | | | | | | | | | | | | | | | | | | | | | |

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

| 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 microbio logically | Number of animals positive microbio logically | Number of suspended herds |
| **CESKÁ REPUBLIKA** | 13653 | 221282 | 13653 | 100 | 0 | 0 | 1305 | 16070 | 0 | 46 | 1 | 7 | 0 | 1 |
| **Total** | 13653 | 221282 | 13653 | 100.0 | 0 | 0.0 | 1305 | 16070 | 0 | 46 | 1 | 7 | 0 | 1 |
| **Total - 1** | | | | | | | | | | | | | | |

# 2.7 YERSINIOSIS

## 2.7.1 General evaluation of the national situation

## 2.7.2 Yersiniosis in humans

### A. Yersinosis in humans

**Reporting system in place for the human cases**

Epidat

**Case definition**

EU

**Notification system in place**

Notifiable diseases

**History of the disease and/or infection in the country**

| MKN DG | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|
| A04.6 Yers | 211 | 231 | 301 | 403 | 372 | 498 |

**Relevance as zoonotic disease**

Morbidity of yersiniosis in CZ reveal increasing (498 cases in the last year). Age distribution is like salmonelloses. Cases are sporadic. Seasonality culminate in october and november. Source is most frequently pork meat.

### 2.7.3 Yersinia in animals

## 2.8 TRICHINELLOSIS

### 2.8.1 General evaluation of the national situation

**A. Trichinellosis general evaluation**

**History of the disease and/or infection in the country**

The trichinellosis is very rare disease in wild life animals. The main sourse of the infection in the Czech Republic are wild boars.

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

The occurence of the disease in animals and humans is sporadic and the situation is stable.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There was no relevance between finding in animals and finding in human.

## 2.8.2 Trichinellosis in humans

## 2.8.3 Trichinella in animals

### A. Trichinella in pigs

#### Number of officially recognised Trichinella-free holdings

There is no officially recognised Trichinella-free holdings in the Czech Republic.

#### Monitoring system

##### Sampling strategy

###### General

All carcasses of pigs are investigated in slaughterhouses. The sampling strategy is realize in accordance with Veterinary Act No. 166/1999 coll., as amended.

##### Frequency of the sampling

###### General

All carcasses of pigs are investigated at slaughterhouses and all hunted wild boar for human consumption were tested for the presence of trichinella according to Veterinary Act No. 166/1999 coll., as amended.

##### Type of specimen taken

###### General

Diaphragm muscles were taken and in the case of absence of diaphragm, the jaw muscle, tonque or abdominal muscles were sampled.

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

###### General

The digestive method is used as a approved method in accordance with Commission Regulation (EC) No 2075/2005.

##### Case definition

###### General

Presence of cyst or organism Trichinella spp. in muscles.

##### Diagnostic/analytical methods used

###### General

The digestive method was carried out in accordance to 2075/2005/EC.

#### Control program/mechanisms

##### The control program/strategies in place

The control program was made in accordance with 77/96/EC to the end of November 2005. The investigations were carried out in accordance with Comission Regulation (EC) No 2075/2005 from December 2005.

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

The meat from positive carcass is excluded from the food chain.

## Results of the investigation including description of the positive cases and the

### Fattening pigs raised under controlled housing conditions in integrated production system

All fattening pigs slaughtered in the slaghterhouses are tested for Trichinella spp. The positive case is presence Trichinella spp. in muscles detected by the digestive method.

### Fattening pigs not raised under controlled housing conditions in integrated production system

Pigs slaughtered at home only for owner consumption are not under official veterinary control. The veterinary control is in that case  voluntary.

### Breeding sows and boars

All breeding sows and boars are sampled in slaughterhouses.

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

The occurence of Trichinella in pigs is very rare and sporadic. Over the reporting period has been detected only one positive finding in wild boar and any occurence of trichinella in domestic pigs.

## B. Trichinella in horses

### Monitoring system

#### Sampling strategy

All horses at slaughter are tested for trichinella. The samples are taken by veterinary authorities in the slaughterhouses.

#### Diagnostic/analytical methods used

Digestive method in accordance with Commission regulation (EC) No 2075/2005.

## Table Trichinella in animals

| | Source of information | Sampling unit | Units tested | Total units positive for Trichinella spp. | T. spiralis | Trichinella spp., unspecified |
|---|---|---|---|---|---|---|
| **Pigs - at slaughterhouse - Monitoring** | SVA | single | 3401215 | 0 | | |
| **Solipeds, domestic - horses - at slaughterhouse - Control and eradication programmes - official sampling** | SVA | single | 267 | 0 | | |
| **Wild boars - wild - from hunting** | SVA | single | 78911 | 0 | | |

# 2.9 ECHINOCOCCOSIS

## 2.9.1 General evaluation of the national situation

### A. Echinococcus spp. general evaluation

**History of the disease and/or infection in the country**

Until 1965 occurred echinococcosis only sporadically in 2% of keepings (low capacity stables) and was minimized and later totally eradicated by innovation and using high capacity stables (restricted access of rodents).

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

The monitoring programme for Echonococcus in wildlife red foxes was introduced n the year 2005. The samples are taken from foxes which were hunted for Rabies efficiency control. In the frame of the programme were tested 833 samples from foxes for echinococcosis. 62 samples were positive for E. multiocularis.
In the year 2006 were tested 958 samples from 958 foxes for echonococosis, 107 samples were positive for E. multiocularis.
In the year 2007 were tested 1250 samples from 1250 foxes for echonococosis, 222 samples were positive for E. multiocularis.
In the year 2008 were tested 1333 samples (from foxes) for echonococosis, 426 samples were positive for E. multiocularis.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

Thanks the post mortem inspection of all carcasses is minimized the risk of releasing infected carcasses. There was now relevance between finding in animals and humans in the year 2005,2006,2007 and 2008 too.

**Recent actions taken to control the zoonoses**

Investigation is performed in two foxes which were hunted or found dead on every 100 km2 of hunting area in year.

## 2.9.2 Echinococcosis in humans

### A. Echinococcus spp. in humans

**Reporting system in place for the human cases**

Epidat

**Case definition**

EU

**Notification system in place**

Notifiable diseases

**History of the disease and/or infection in the country**

rare occurrence - imported cases

**Results of the investigation**

Two imported cases in the year 2005.

## 2.9.3 Echinococcus in animals

### Table Echinococcus in animals

| | Source of information | Sampling unit | Units tested | Total units positive for Echinococcus spp. | E. granulosus | E. multilocularis | Echinococcus spp., unspecified |
|---|---|---|---|---|---|---|---|
| **Foxes - from hunting - Monitoring** | | single | 1333 | 426 | | | 426 |

# 2.10 TOXOPLASMOSIS

## 2.10.1 General evaluation of the national situation

## 2.10.2 Toxoplasmosis in humans

### A. Toxoplasmosis in humans

**Reporting system in place for the human cases**

Epidat

**Case definition**

EU

**Diagnostic/analytical methods used**

Laboratory

**History of the disease and/or infection in the country**

| year | cases |
|---|---|
| 1970 | 91 |
| 1971 | 121 |
| 1972 | 157 |
| 1973 | 253 |
| 1974 | 1535 |
| 1975 | 460 |
| 1976 | 1071 |
| 1977 | 369 |
| 1978 | 1093 |
| 1979 | 773 |
| 1980 | 783 |
| 1981 | 704 |
| 1982 | 728 |
| 1983 | 959 |
| 1984 | 826 |
| 1985 | 875 |
| 1986 | 721 |
| 1987 | 569 |
| 1988 | 633 |
| 1989 | 595 |
| 1990 | 793 |
| 1991 | 706 |
| 1992 | 823 |
| 1993 | 860 |
| 1994 | 2056 |

1995 1514
1996 1217
1997 952
1998 777
1999 857
2000 670
2001 516
2002 646
2003 455
2004 219

**Results of the investigation**

Steady decrease of incidence

# 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**

Continual research carried out during 1960  1980 proved that rabies had become endemic in the border areas of West and North Bohemia and North Moravia. The importance of foxes in rabies epidemiology increased and red fox became the principal vector of rabies in the Czech Republic. Neither subsidiaries payment for hunted foxes, which was introduced in 1969, nor gassing of fox dens, carried out during 1979-1984, did not improved the situation. In the 1980s rabies reached its greatest geographical range. With the exception of several districts, the whole territory of the Czech Republic was affected. The oral vaccination of foxes was launched in a few districts adjacent to German borders in 1989 and implemented further thereafter. Since that time continual decline has been visible especially since 1992 when positive effect of oral vaccination has become evident.

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

The last outbreak of Rabies was reported in April 2002.The rabies data reported during the last thirteen years indicate the development of the rabies situation in our country since the beginning of oral vaccination. In the period 1989 to 2003, 135 819 animals were examined for rabies. The major parts of them were foxes (more than 50%) followed by cats and dogs participating by 30 % together.Rabies was diagnosed in 6 180 cases during this thirteen year period. The highest number of rabies cases was recorded in 1989 reaching 1 501 cases. The lowest occurrence (3 cases  April) was recorded in 2002. The involvement of animal species shows that wild animals participated by 95,6% and domestic animals by 4,4 %. The highest occurrence was recorded in foxes accounting for 90,4% of the total cases. Other wild animals and domestic animals participated only by 5,2% and 4,4% respectively.

The last occurence of Rabies was reported in bat in the year 2005, it was only one sporadic case. There was no outbreak in wildife or domestic animals since April 2002.

**Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases**

There was no relevance between finding in animal and Humans. Human rabies occurs very rarely in the Czech Republic.

Only three cases in human were diagnosed during last 40 years.(1968-1 woman-Fox; 1973-1 man-Dog India; 1989-1 man-Unknown in Vietnam)

**Recent actions taken to control the zoonoses**

Domestic animals

Preventive vaccination of domestic carnivores and if necessary, domestic herbivores are the principal methods of domestic animals protection. The inactivated tissue-culture vaccines are used exclusively for this purpose.

Wild animals

In total, 9.556 animals were examined for rabies during 2005. One positive case was recorded in bat.

The strategy of rabies control is based on reduction of wildlife reservoir of the virus by oral vaccination of foxes.The strategy of vaccine baits distribution twice a year in spring and autumn was applied. Since 1992, only Czech made live attenuated vaccine SAD - Bern has been used for vaccination campaigns. Results of oral vaccination:Control examinations following baits distribution were oriented to baits uptake, rabies diagnosis, tetracycline marking, characterization of virus strains and antibody formation. The indirect measuring of baits uptake was obtained by the examination of fox bones for tetracycline incorporation. As recommended by WHO, after each campaign, wildlife specimens were collected from vaccination area for examination.

In total, 7927 animals were examined for rabies during 2006, no positive case was found.

In total, 4798 animals were examined for rabies during 2007, no positive case was found.

In total, 8917 animals were examined for rabies during 2008, no positive case was found.

## 2.11.2 Rabies in humans

## 2.11.3 Lyssavirus (rabies) in animals

### A. Rabies in dogs

**Monitoring system**

**Sampling strategy**

The sampling is performed only in suspected animals or in animals which savage people.

**Frequency of the sampling**

In indicated cases.

**Type of specimen taken**

Other: clinical investigation or brain

**Methods of sampling (description of sampling techniques)**

Samples of brain are taken in State Veterinary Institute.

**Case definition**

Positive IF test.

**Diagnostic/analytical methods used**

Fluorescent Antibody Test (FAT) on smears from hippocampus or medulla oblongata

**Vaccination policy**

Antirabies vaccination is obligatory acording to Vet. care Act No 166/1999. Every breeder has to ensure that dogs and some other animals kept in captivity, particulary foxes, badgers and martens, are vaccinated against rabies at their age of 3 months and then revaccinated in regular intervals. The vaccination is carry out by private veterinariens at the owners expense.

**Other preventive measures than vaccination in place**

All dogs which bite a man must be clinically investigated by the veterinarien.

**Control program/mechanisms**

**The control program/strategies in place**

The Czech Republic carry out program for oral vaccination of Foxes.

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

Positive animals are destroyd.

**Notification system in place**

Rabies is notifieble disease and the notification system is lay down by the Act No. 166/1999, as amended(Veterinary Act).

**Results of the investigation**

The person responsible for the clinical investigation and laboratory testing have to notify the positive results to the competent authority.

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

The situation in relation to the Rabies is very good and is stable. The last Rabies (in fox) was in the 2002 year and the aim is keep the situation.

**Relevance of the findings in animals to findings in foodstuffs and to human cases**

There is no relevance.

## Table Rabies in animals

| | Source of information | Sampling unit | Units tested | Total units positive for Lyssavirus (rabies) | Unspecified Lyssavirus | Classical rabies virus (genotype 1) | European Bat Lyssavirus - unspecified |
|---|---|---|---|---|---|---|---|
| **All animals - unspecified** | SVA | animal | 92 | 0 | 0 | 0 | 0 |
| **Badgers - wild - in total** | SVA | animal | 11 | 0 | 0 | 0 | 0 |
| **Bats - wild - in total** | SVA | animal | 13 | 0 | 0 | 0 | 0 |
| **Cats - in total** | SVA | animal | 270 | 0 | 0 | 0 | 0 |
| **Deer - wild - roe deer - in total** | SVA | animal | 29 | 0 | 0 | 0 | 0 |
| **Dogs - in total** | SVA | animal | 156 | 0 | 0 | 0 | 0 |
| **Foxes - wild - in total - Monitoring** | SVA | animal | 8259 | 0 | 0 | 0 | 0 |
| **Goats - in total** | SVA | animal | 1 | 0 | 0 | 0 | 0 |
| **Marten - wild - in total** | SVA | animal | 62 | 0 | 0 | 0 | 0 |
| **Raccoon dogs - wild - in total** | SVA | animal | 9 | 0 | 0 | 0 | 0 |
| **Sheep - in total** | SVA | animal | 3 | 0 | 0 | 0 | 0 |
| **Solipeds, domestic - in total** | SVA | animal | 1 | 0 | 0 | 0 | 0 |
| **Wild boars - wild - in total** | SVA | animal | 10 | 0 | 0 | 0 | 0 |

## 2.12 Q-FEVER

### 2.12.1 General evaluation of the national situation

# 3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

## 3.1 ENTEROCOCCUS, NON-PATHOGENIC

### 3.1.1 General evaluation of the national situation

## 3.2 ESCHERICHIA COLI, NON-PATHOGENIC

### 3.2.1 General evaluation of the national situation

# 4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

# 4.1 HISTAMINE

## 4.1.1 General evaluation of the national situation

## 4.1.2 Histamine in foodstuffs

### A. Histamine in foodstuffs

**Monitoring system**

**Sampling strategy**

There is no official National program for monitoring of histamin at retail. CAFIA performed control at retail according to Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU Regulation No. 1441/2007).

Samples were collected by competent authority as part of an official sampling from 7 regions of the Czech Republic 10-times within a year by the inspectors and analysed in CAFIA laboratory. The sampling by CAFIA was random.

**Frequency of the sampling**

10-times a year an one sample.

**Type of specimen taken**

smoked fish products

**Methods of sampling (description of sampling techniques)**

Sample of 100 grams minimum each of (n=9) is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Numbers of subsamples n=9 were taken in accordance with Commission Regulation (EC) No 2073/2005.

**Definition of positive finding**

Batch in non-conformity - a batch for which the mean value of the sample units exceeds 100 mg/kg or 200 mg/kg.

**Diagnostic/analytical methods used**

HPLC in accordance with Regulation (EC) No 2073/2005.

**Control program/mechanisms**

**Recent actions taken to control the hazard**

CAFIA monitored of histmin in accordance with Commission Regulation (EC) No 2073/2005 (as amended by EU Regulation No. 1441/2007) in smoked fishery products from fish species of the family Scombridae, Clupeidae,

Scombresosidae.

**Results of the investigation**

In total, 18 samples of smoked fishery products (9x mackerel, 4x herring, 5x salmon) were examined for presence of histamin. None of the samples examined exceeded the mean value 100 mg/kg.

## Table Histamine in food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units in non-conformity | <= 100 mg/kg | >100 - <= 200 mg/kg | >200 - <= 400 mg/kg | > 400 mg/kg |
|---|---|---|---|---|---|---|---|---|---|
| **Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 18 | 0 | 18 | | | |

# 4.2 ENTEROBACTER SAKAZAKII

## 4.2.1 General evaluation of the national situation

## 4.2.2 Enterobacter sakazakii in foodstuffs

### A. Enterobacter sakazakii in foodstuffs

**Monitoring system**

**Sampling strategy**

There is no official National program for monitoring of Enterobacter sacazakii at food business operators. SVA tested 3 samples of milk powder with negative results. As there was only such a small number of samples we do not provide any additional comments.

**Control program/mechanisms**

**Recent actions taken to control the hazard**

**Results of the investigation**

## Table Enterobacter sakazakii in food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Enterobacter sakazakii | E. sakazakii |
|---|---|---|---|---|---|---|
| **Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - HACCP and own checks (milk powder)** | SVA | single | 10 g | 3 | 0 | 0 |

# 4.3 STAPHYLOCOCCAL ENTEROTOXINS

## 4.3.1 General evaluation of the national situation

## 4.3.2 Staphylococcal enterotoxins in foodstuffs

### A. Staphylococcal enterotoxins in foodstuffs

**Monitoring system**

**Sampling strategy**

There is no official National program for monitoring of staphylococcal enterotoxins at retail nor at food business operators.

SVA performed control according to Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU Regulation No. 1441/2007). SVA collected samples at the time during or at the end of the manufacturing process.

CAFIA performed control at retail according to performed control at retail according to Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs (as amended by EU Regulation No. 1441/2007).

Samples were collected by competent authority as part of an official sampling from an one region of the Czech Republic twice a year and analysed in CAFIA laboratory. The sampling by CAFIA was random.

**Frequency of the sampling**

SVA performs sampling at random.
CAFIA performs sampling twice a year.

**Type of specimen taken**

cheese, milk powder

**Methods of sampling (description of sampling techniques)**

Sample of 100 grams minimum each is taken in a sterile way, into clean and dry plastic bag. The samples are placed into refrigerated container and immediately sent to the laboratory for investigation. Numbers of subsamples n=5 in accordance with Regulation (EC) No 2073/2005 were taken.

**Definition of positive finding**

The positive batch means the presence of staphylococal enterotoxins in 25g only in one of all subsamples.

**Diagnostic/analytical methods used**

European screening method (version II.) for the detection of staphylococcal enterotoxins in milk and milk products recommended in Regulation (EC) No 2073/2005 (Reference: Community reference laboratory for coagulase positive

staphylococci).

**Results of the investigation**

In 2008, no sample out of the total number of 64 samples tested by the SVA and CAFIA was positive.

## Table Staphylococcal enterotoxins in food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Staphylococcal enterotoxins |
|---|---|---|---|---|---|
| **Cheeses made from cows' milk - Surveillance - official controls (see Sampling strategy )** | SVA,CAFIA | batch | 25 | 47 | 0 |
| **Cheeses made from cows' milk - hard - at processing plant - Surveillance - official controls** | SVA | batch | 25g | 12 | 0 |
| **Cheeses made from cows' milk - hard - made from pasteurised milk - at processing plant - Monitoring - official sampling** | SVA | batch | 25g | 12 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - Surveillance - official controls** | SVA, CAFIA | batch | 25g | 35 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at processing plant - Surveillance - official controls** | SVA | batch | 25g | 19 | 0 |
| **Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 16 | 0 |
| **Dairy products (excluding cheeses) - Surveillance - official controls** | SVA, CAFIA | batch | 25g | 6 | 0 |
| **Dairy products (excluding cheeses) - milk powder and whey powder - at processing plant - Surveillance - official controls** | SVA | batch | 25g | 3 | 0 |
| **Dairy products (excluding cheeses) - milk powder and whey powder - at retail - Surveillance - official controls (milk powder)** | CAFIA | batch | 25 g | 3 | 0 |
| **Infant formula - dried - at retail - Surveillance - official controls** | CAFIA | batch | 25 g | 11 | 0 |

# 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, epidemological investigations and reporting of

Epidemiological investigation of outbreaks are performed by regional public health authorities. After completing epidemiological investigation they provide MOH and National Institute of Public Health with written report on outbreak. Reports are mandatory for larger outbreaks. Summaries are published in yearly table.

### Description of the types of outbreaks covered by the reporting:

Mainly general outbreaks are reported. Decision on reporting other outbreaks (mainly family outbreaks) are made by regional authorities. Individual data on disease episodes from specific outbreaks are notified in EPIDAT, general infectious disease notification system. Reporting doesnÂ´t depend on causative agent.

### National evaluation of the reported outbreaks in the country:

#### Trends in numbers of outbreaks and numbers of human cases involved

We notified approximately hundred of rather small outbreaks yearly In last several years. Outbreak cases form in average 10% and family outbreaks about 15% of all notified cases. Sporadic cases aform approximately 3/4 of all cases.

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

Main causative agens in their significance are S.enteritidis, outbreaks caused by S.typhimurium and C.jejuni are relatively rare. We observe increase in outbreaks of foodborne diseases of viral origin. The most risky food components are eggs and poultry.

#### Evaluation of the severity and clinical picture of the human cases

Severe and fatal cases are very rare and are linked with bad health conditions.

#### Descriptions of single outbreaks of special interest

Outbreaks of particular interest are published in Centre of epidemiology and microbiology reports (NIPH).

#### Control measures or other actions taken to improve the situation

Control measures performed are done on legal basis.

Foodborne Outbreaks: summarized data

| | Total number of outbreaks | Outbreaks | Human cases | Hospitalized | Deaths | Number of verified outbreaks |
|---|---|---|---|---|---|---|
| Bacillus | 0 | 0 | unknown | unknown | unknown | 0 |
| Campylobacter | 0 | 0 | 15 | 14 | 0 | 0 |
| Clostridium | 0 | 0 | unknown | unknown | unknown | 0 |
| Escherichia coli, pathogenic | 0 | 0 | unknown | unknown | unknown | 0 |
| Foodborne viruses | 2 | 2 | 183 | 2 | 1 | 0 |
| Listeria | 0 | 0 | unknown | unknown | unknown | 0 |
| Other agents | 0 | 0 | unknown | unknown | unknown | 0 |
| Parasites | 0 | 0 | unknown | unknown | unknown | 0 |
| Salmonella | 17 | 16 | 271 | 28 | 1 | 1 |
| Staphylococcus | 0 | 0 | unknown | unknown | unknown | 0 |
| Unknown | 3 | 3 | 159 | 0 | 0 | 0 |
| Yersinia | 0 | 0 | unknown | unknown | unknown | 0 |

## Verified Foodborne Outbreaks: detailed data

## S. Enteritidis

| | Value |
|---|---|
| Code | BYSTICE |
| Subagent Choice | Salmonella; S. Enteritidis; 8 |
| Outbreak type | General |
| Human cases | 102 |
| Hospitalized | 16 |
| Deaths | 1 |
| Foodstuff implicated | Eggs and egg products |
| More Foodstuff | |
| Type of evidence | Laboratory detection in implicated food, Laboratory characterization of food and human isolates, Laboratory detection in human cases |
| Setting | Other setting |
| Place of origin of problem | Unknown |
| Origin of foodstuff | Not relevant |
| Contributory factors | Other contributory factor, Inadequate heat treatment, Infected food handler, Storage time/temperature abuse |
| Outbreaks | 1 |
| Comment | Home for people with disabilities<br>Etiological agens Salmonella Enteritidis PT 8, pulsotype SEXBA 05 |