

MALTA

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

TRENDS AND SOURCES OF ZOONOSSES AND ZOOBOTIC 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: **Malta**

Reporting Year:

| Laboratory name | Description | Contribution |
|--|-------------|--------------|
| Fiah andFarming Regulation Control division | | |

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 Malta 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.

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

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1. ANIMAL POPULATIONS

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

Table Susceptible animal populations

| Animal species | Category of animals | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|-------------------------|--|---------------------------|------|-------------------------------|------|----------------------------------|------|--------------------|------|
| | | | Year | | Year | | Year | | Year |
| Cattle (bovine animals) | calves (under 1 year) | 0 | 2008 | 64 | 2008 | 4412 | 2008 | 0 | 2008 |
| | dairy cows and heifers | 150 | 2008 | 2444 | 2008 | 10225 | 2008 | 150 | 2008 |
| | in total | 352 | 2008 | 5200 | 2008 | 16836 | 2008 | 352 | 2008 |
| | meat production animals | 202 | 2008 | 2692 | 2008 | 2199 | 2008 | 202 | 2008 |
| | mixed herds ¹⁾ | 0 | 2008 | | | | | 0 | 2008 |
| Deer | farmed - in total ²⁾ | 0 | 2008 | | | | | | |
| Ducks | breeding flocks, unspecified - in total | 0 | 2008 | | | | | | |
| | elite breeding flocks | 0 | | | | | | | |
| | grandparent breeding flocks | 0 | | | | | | | |
| | in total | 0 | | | | | | | |
| | meat production flocks | 0 | | | | | | | |
| | mixed flocks/holdings | 0 | | | | | | | |
| | parent breeding flocks ³⁾ | 0 | 2008 | | | | | | |
| Gallus gallus (fowl) | breeding flocks for egg production line - in total | 0 | | | | | | | |

Table Susceptible animal populations

| Animal species | Category of animals | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|----------------------|--|---------------------------|------|-------------------------------|------|----------------------------------|------|--------------------|------|
| | | | Year | | Year | | Year | | Year |
| Gallus gallus (fowl) | breeding flocks for meat production line - in total | 0 | | | | | | | |
| | breeding flocks, unspecified - in total | 0 | | | | | | | |
| | broilers | 623 | 2008 | 3118910 | 2008 | 4117310 | 2008 | 127 | 2008 |
| | elite breeding flocks for egg production line | 0 | | | | | | | |
| | elite breeding flocks for meat production line | 0 | | | | | | | |
| | elite breeding flocks, unspecified - in total | 0 | | | | | | | |
| | grandparent breeding flocks for egg production line | 0 | | | | | | | |
| | grandparent breeding flocks for meat production line | 0 | 2008 | | | | | | |
| | grandparent breeding flocks, unspecified - in total | 0 | | | | | | | |
| | in total | 872 | | | | 4750176 | 2008 | 175 | 2008 |
| | laying hens | 249 | 2008 | | | 632866 | 2008 | 48 | 2008 |
| | mixed flocks/holdings ⁴⁾ | | | | | | | | |
| | parent breeding flocks for egg production line | 0 | | | | | | | |

Table Susceptible animal populations

| Animal species | Category of animals | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|----------------------|---|---------------------------|------|-------------------------------|------|----------------------------------|------|--------------------|------|
| | | | Year | | Year | | Year | | Year |
| Gallus gallus (fowl) | parent breeding flocks for meat production line | 0 | 2008 | | | | | | |
| | parent breeding flocks, unspecified - in total | 0 | | | | | | | |
| Geese | breeding flocks, unspecified - in total | 0 | | | | | | | |
| | elite breeding flocks | 0 | | | | | | | |
| | grandparent breeding flocks | 0 | | | | | | | |
| | in total | 0 | | | | | | | |
| | meat production flocks | 0 | | | | | | | |
| | mixed flocks/holdings | 0 | | | | | | | |
| | parent breeding flocks | 0 | | | | | | | |
| Goats | animals over 1 year | | | | | 5098 | 2008 | 1835 | 2008 |
| | animals under 1 year | | | | | 1304 | 2008 | 1835 | |
| | in total ⁵⁾ | | | | | 6402 | 2008 | 1835 | |
| | meat production animals ⁶⁾ | 0 | | | | | | | |
| | milk goats | | | | | 4675 | 2008 | 1835 | 2008 |

Table Susceptible animal populations

| Animal species | Category of animals | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|----------------|--|---------------------------|------|-------------------------------|------|----------------------------------|------|--------------------|------|
| | | | Year | | Year | | Year | | Year |
| Goats | mixed herds | 1835 | 2008 | | | | | 1835 | 2008 |
| Pigs | breeding animals | | | 2342 | | 6932 | 2008 | | 2008 |
| | breeding animals - unspecified - sows and gilts | | | 2108 | 2008 | 6530 | 2008 | | |
| | fattening pigs | | | 99762 | 2008 | 105318 | 2008 | | 2008 |
| | in total | 174 | | 102104 | | 111848 | 2008 | 174 | 2008 |
| | mixed herds | 174 | | | | | | 174 | 2008 |
| Reindeers | farmed - in total ⁷⁾ | 0 | 2008 | 0 | 2008 | 0 | 2008 | 0 | 2008 |
| Sheep | animals over 1 year | | | | | 10002 | 2008 | 1835 | |
| | animals under 1 year (lambs) | | | | | 2940 | 2008 | 1835 | |
| | in total ⁸⁾ | | | | | 12942 | 2008 | 1835 | |
| | meat production animals ⁹⁾ | | | | | | | | |
| | milk ewes | | | | | 9478 | 2008 | 1835 | 2008 |
| | mixed herds | 1835 | 2008 | | | | | | |
| Turkeys | breeding flocks, unspecified - in total ¹⁰⁾ | | | | | | | | |

Table Susceptible animal populations

| Animal species | Category of animals | Number of herds or flocks | | Number of slaughtered animals | | Livestock numbers (live animals) | | Number of holdings | |
|----------------|--|---------------------------|------|-------------------------------|------|----------------------------------|------|--------------------|------|
| | | | Year | | Year | | Year | | Year |
| Turkeys | elite breeding flocks ¹¹⁾ | | | | | | | | |
| | grandparent breeding flocks ¹²⁾ | | | | | | | | |
| | in total | 1 | 2008 | 300 | | 300 | 2008 | 1 | 2008 |
| | meat production flocks | 1 | 2008 | 300 | | 300 | 2008 | 1 | 2008 |
| | mixed flocks/holdings ¹³⁾ | | | | | | | | |
| | parent breeding flocks ¹⁴⁾ | | | | | | | | |
| Wild boars | farmed - in total ¹⁵⁾ | 0 | | 0 | | 0 | | 0 | 2008 |

Comments:

¹⁾ Bovine Farms in Malta consist of dairy breeds, the males of which are fattened for slaughter.

²⁾ there are no farmed deer in Malta

³⁾ There are no Duck operations in Malta

⁴⁾ 4 of the broiler farms are mixed holdings.

⁵⁾ These holdings are mixed farms having both goats and sheep. Although these farms are predominantly dairy and cheese producing units they from time to time sell animals for slaughter.

⁶⁾ These holdings are mixed holdings with a small number of animals slaughtered for meat.

⁷⁾ There are no farmed or wild Reindeers in Malta

⁸⁾ These holdings are mixed farms having both goats and sheep. Although these farms are predominantly dairy and cheese producing units they from time to time sell animals for slaughter.

⁹⁾ These holdings are mixed holdings with a small number of animals slaughtered for meat.

¹⁰⁾ 0

¹¹⁾ 0

¹²⁾ 0

Table Susceptible animal populations

- ¹³⁾ 0
- ¹⁴⁾ 0
- ¹⁵⁾ There are no wild or farmed boar in Malta

2. INFORMATION ON SPECIFIC ZONOSSES AND ZOONOTIC AGENTS

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

2.1 SALMONELLOSIS

2.1.1 General evaluation of the national situation

2.1.2 Salmonellosis in humans

Table Salmonella in humans - Species/serotype distribution

| Salmonella | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. | Unknown status |
|-----------------------------|-------|------------|-------------------|------------------|----------------|---------------|----------------|
| | 167 | 40.98 | 167 | 40.98 | 0 | 0 | 0 |
| S. Clackamas | 1 | 0.24 | 1 | 0.24 | 0 | 0 | 0 |
| S. Croft | 1 | 0.24 | 1 | 0.24 | | | |
| S. Derby | 2 | 0.48 | 2 | 0.48 | 0 | 0 | 0 |
| S. Enteritidis | 77 | 18.7 | 77 | 18.7 | 0 | 0 | 0 |
| S. Give | 1 | 0.24 | 1 | 0.24 | 0 | 0 | 0 |
| S. Goldcoast | 1 | 0.24 | 1 | 0.24 | 0 | 0 | 0 |
| S. Indiana | 2 | 0.48 | 2 | 0.48 | 0 | 0 | 0 |
| S. Infantis | 4 | 1 | 4 | 1 | 0 | 0 | 0 |
| S. Kedougou | 2 | 0.48 | 2 | 0.48 | 0 | 0 | 0 |
| S. Kentucky | 1 | 0.24 | 1 | 0.24 | 0 | 0 | 0 |
| S. Livingstone | 1 | 0.24 | 1 | 0.24 | 0 | 0 | 0 |
| S. Typhimurium | 44 | 11 | 44 | 11 | 0 | 0 | 0 |
| S. Species | 16 | 4 | 16 | 4 | 0 | 0 | 0 |
| S. enterica subsp. enterica | 14 | 3.4 | 14 | 3.4 | 0 | 0 | 0 |

Table Salmonella in humans - Age distribution

| Age Distribution | S. Clackamas | | | S. Croft | | | S. Derby | | | S. Enteritidis | | | S. Give | | |
|--------------------|--------------|---|---|----------|---|---|----------|---|---|----------------|----|----|---------|---|---|
| | All | M | F | All | M | F | All | M | F | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 6 | 4 | 2 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 9 | 14 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 22 | 10 | 12 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 4 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| 45 to 64 years | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 3 | 2 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 5 | 4 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | | 0 | 0 |
| Total: | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 0 | 77 | 37 | 40 | 1 | 1 | 0 |

| | S. Goldcoast | | | S. Indiana | | | S. Infantis | | | S. Kedougou | | | S. Kentucky | | |
|--------------------|--------------|---|---|------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| | All | M | F | All | M | F | All | M | F | All | M | F | All | M | F |
| <1 year | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |

Table Salmonella in humans - Seasonal distribution

| Month | S. Clackamas | S. Croft | S. Derby | S. Enteritidis | S. Give | S. Goldcoast | S. Indiana | S. Infantis | S. Kedougou | S. Kentucky | S. Livingstone | S. Typhimurium | Salmonella spp. | S. enterica subsp. enterica |
|-----------|--------------|----------|----------|----------------|---------|--------------|------------|-------------|-------------|-------------|----------------|----------------|-----------------|-----------------------------|
| | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases | Cases |
| January | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 |
| March | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| April | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| May | 0 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| June | 0 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| July | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 6 |
| August | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 4 | 0 |
| September | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 1 |
| October | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 13 | 3 | 3 |
| November | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 1 |
| December | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 1 |
| Total: | 1 | 1 | 2 | 77 | 1 | 1 | 2 | 4 | 2 | 1 | 1 | 44 | 16 | 14 |

2.1.3 Salmonella in foodstuffs

Table Salmonella in poultry meat and products thereof

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Salmonella spp. | S. Bredeney | S. Enteritidis | S. Hadar | S. Haifa | S. Infantis | S. Kentucky |
|--|-----------------------|---------------|---------------|--------------|--|-------------|----------------|----------|----------|-------------|-------------|
| Meat from broilers (<i>Gallus gallus</i>) - fresh - at slaughterhouse - Survey - EU baseline survey (acc. to C.D 516/2007) | ¹⁾ | slaughter | 25g | 367 | 77 | 28 | 0 | 2 | 5 | 3 | 15 |
| Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling (whole carcass) | ²⁾ | slaughter | 25g | 1 | 0 | | | | | | |

| | S. Kottbus | S. Typhimurium | Salmonella spp., unspecified |
|--|-----------------|----------------|------------------------------|
| Meat from broilers (<i>Gallus gallus</i>) - fresh - at slaughterhouse - Survey - EU baseline survey (acc. to C.D 516/2007) | ¹⁾ 2 | 12 | 10 |
| Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling (whole carcass) | ²⁾ | | |

Comments:

- ¹⁾ There are only 4 slaughterhouses in Malta, samples were taken through simple randomisation proportionately according to their annual production.
- ²⁾ In 2008 only one slaughter batch of 300 birds was slaughtered in december. The other dya-olds imported were sold to individuals to be fattened for own consumption.

Footnote:

10 isolates were not typed since the cultures could not be regenerated.

2.1.4 Salmonella in animals

Table Salmonella in breeding flocks of Gallus gallus

Footnote:

No breeding flocks present in the region of Malta

Table Salmonella in other poultry

Footnote:

No salmonella controle programmes were carried out in poultry in 2008.

2.1.5 Salmonella serovars and phagetype distribution

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

Table Salmonella Enteritidis phagetypes in humans

Footnote:

Phage typing is not performed in Malta

Table Salmonella Typhimurium phagetypes in humans

Footnote:

Phage typing is not performed in Malta.

2.1.6 Antimicrobial resistance in Salmonella isolates

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 | | 44 | |
| Antimicrobials: | | N | n |
| Aminoglycosides | Gentamicin | 42 | 0 |
| Fluoroquinolones | Ciprofloxacin | 42 | 0 |
| Penicillins | Ampicillin | 44 | 36 |
| Trimethoprim | Trimethoprim | 42 | 0 |

Table Breakpoints for antibiotic resistance testing

| Test Method Used | | Standards used for testing | | | | | | | | | |
|------------------|-----------------------|----------------------------|--|--|--|--|--|--|--|--|--|
| Disc diffusion | <input type="radio"/> | NCCLS | | | | | | | | | |
| Agar dilution | <input type="radio"/> | | | | | | | | | | |
| Broth dilution | <input type="radio"/> | | | | | | | | | | |
| E-test | <input type="radio"/> | | | | | | | | | | |

| | | Standard for breakpoint | Breakpoint concentration (microg/ml) | | | Range tested concentration (microg/ml) | | Disk content microg | Breakpoint Zone diameter (mm) | | |
|------------------|---------------|-------------------------|--------------------------------------|--------------|-------------|--|---------|---------------------|-------------------------------|--------------|--------------|
| | | | Susceptible <= | Intermediate | Resistant > | lowest | highest | | Susceptible >= | Intermediate | Resistant <= |
| Aminoglycosides | Gentamicin | | 0.5 | | 16 | | | | | | |
| Fluoroquinolones | Ciprofloxacin | | 0.5 | 4 | 4 | | | | | | |
| Penicillins | Ampicillin | | 0.25 | | 32 | | | | | | |
| Trimethoprim | Trimethoprim | | 10 | | 320 | | | | | | |

2.2 CAMPYLOBACTERIOSIS

2.2.1 General evaluation of the national situation

2.2.2 Campylobacteriosis in humans

Table Campylobacter in humans - Species/serotype distribution

| Campylobacter | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. | Unknown status |
|---------------------------------|-------|------------|-------------------|------------------|----------------|---------------|----------------|
| | 79 | 19.28 | 79 | 19.28 | 0 | 0 | 0 |
| C. coli | 11 | 2.7 | 11 | 2.7 | | | |
| C. jejuni | 44 | 10.7 | 44 | 10.7 | | | |
| C. upsaliensis | 1 | 0.24 | 1 | 0.24 | | | |
| C. fetus | 1 | 0.24 | 1 | 0.24 | | | |
| Campylobacter spp., unspecified | 22 | 5.4 | 22 | 5.4 | | | |

Table Campylobacter in humans - Age distribution

| Age Distribution | C. coli | | | C. jejuni | | | C. fetus | | | C. upsaliensis | | | Campylobacter spp., unspecified | | |
|--------------------|---------|---|---|-----------|----|----|----------|---|---|----------------|---|---|---------------------------------|----|----|
| | All | M | F | All | M | F | All | M | F | All | M | F | All | M | F |
| <1 year | 0 | | | 6 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 |
| 1 to 4 years | 4 | 3 | 1 | 11 | 6 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 4 | 2 |
| 5 to 14 years | 4 | 3 | 1 | 7 | 6 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 |
| 15 to 24 years | 1 | 1 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 25 to 44 years | 0 | | | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| 45 to 64 years | 0 | | | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| 65 years and older | 2 | 0 | 2 | 7 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 |
| Age unknown | 0 | | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| Total: | 11 | 7 | 4 | 44 | 28 | 16 | 1 | 0 | 1 | 1 | 0 | 1 | 22 | 12 | 10 |

Table Campylobacter in humans - Seasonal distribution

| Month | C. coli | C. jejuni | C. upsaliensis | C. fetus | Campylobacter spp., unspecified |
|-----------|---------|-----------|----------------|----------|---------------------------------|
| | Cases | Cases | Cases | Cases | Cases |
| January | 0 | 1 | 0 | 0 | 0 |
| February | 0 | 5 | 0 | 0 | 1 |
| March | 2 | 3 | 1 | 1 | 2 |
| April | 1 | 4 | 0 | 0 | 5 |
| May | 1 | 13 | 0 | 0 | 0 |
| June | 1 | 5 | 0 | 0 | 0 |
| July | 1 | 3 | 0 | 0 | 1 |
| August | 1 | 2 | 0 | 0 | 1 |
| September | 1 | 2 | 0 | 0 | 3 |
| October | 0 | 1 | 0 | 0 | 2 |
| November | 1 | 3 | 0 | 0 | 5 |
| December | 2 | 2 | 0 | 0 | 2 |
| not known | 0 | 0 | 0 | 0 | 0 |
| Total: | 11 | 44 | 1 | 1 | 22 |

2.2.3 Campylobacter in foodstuffs

Table Campylobacter in poultry meat

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for thermophilic Campylobacter spp. | C. coli | C. jejuni | C. lari | C. upsaliensis | Thermophilic Campylobacter spp., unspecified |
|---|-----------------------|---------------|---------------|--------------|--|---------|-----------|---------|----------------|--|
| Meat from broilers (Gallus gallus) - fresh - at slaughterhouse - Survey - EU baseline survey (1 carcass after chilling per sampling batch tested) | | slaughter | 25g | 367 | 348 | 185 | 149 | 4 | 10 | |
| Meat from turkey - fresh - at slaughterhouse - Monitoring - official sampling (1 carcass after chilling per slaughter batch tested) ¹⁾ | | slaughter | 25g | 1 | 1 | 1 | | | | |

Comments:

¹⁾ only one slaughterbatch of 300 birds was slaughtered throughout the year. other birds fattened were in very small numbers for own consumption

2.2.4 Campylobacter in animals

Table Campylobacter in animals

| | Source of information | Sampling unit | Units tested | Total units positive for thermophilic Campylobacter spp. | C. coli | C. jejuni | C. lari | C. upsaliensis | Thermophilic Campylobacter spp., unspecified |
|--|-----------------------|---------------|--------------|--|---------|-----------|---------|----------------|--|
| Gallus gallus (fowl) - broilers - at slaughterhouse - animal sample - caecum - Survey - EU baseline survey (10 caeca per slaughter batch sampled) | | slaughter | 367 | 356 | 271 | 80 | 3 | 2 | |
| Turkeys - at slaughterhouse - animal sample - caecum - Monitoring - official sampling - objective sampling (10 caeca collected from the slaughter batch) ¹⁾ | | slaughter | 1 | 1 | 1 | | | | |

Comments:

¹⁾ In 2008, only one slaughter batch of 300 birds was slaughtered.

2.2.5 Antimicrobial resistance in Campylobacter isolates

Table Antimicrobial susceptibility testing of C. coli - qualitative data

| C. coli | | Gallus gallus (fowl) - at slaughterhouse - Survey - EU baseline survey | |
|--|---------------|--|----|
| Isolates out of a monitoring program (yes/no) | | yes | |
| Number of isolates available in the laboratory | | 83 | |
| Antimicrobials: | | N | n |
| Aminoglycosides | Gentamicin | 83 | 11 |
| | Streptomycin | 83 | 49 |
| Fluoroquinolones | Ciprofloxacin | 83 | 62 |
| Macrolides | Erythromycin | 83 | 63 |
| Tetracyclines | Tetracyclin | 83 | 45 |

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - at slaughterhouse - Survey - EU baseline survey - quantitative data
[Dilution method]

| C. coli Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials: | | Gallus gallus (fowl) - at slaughterhouse - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|--|----|----|---------|-------|------|------|------|------|-----|----|----|----|----|----|----|----|-----|-----|-----|------|------|-------|--------|---------|--|
| | | yes | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 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 | 2 | 83 | 11 | | | | | | 7 | 48 | 17 | | | 11 | | | | | | | | | | | | |
| | Streptomycin | 4 | 83 | 49 | | | | | | | | 3 | 31 | 10 | 2 | 5 | 32 | | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 1 | 83 | 62 | | | | | 7 | 7 | 4 | 3 | 2 | 1 | 59 | | | | | | | | | | | | |
| Macrolides | Erythromycin | 1 | 83 | 63 | | | | | | | 6 | 14 | 22 | 16 | 8 | 1 | 1 | 15 | | | | | | | | | |
| Penicillins | Ampicillin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | | 83 | 83 | | | | | | | | | | 3 | 9 | 3 | 1 | 67 | | | | | | | | | |
| Tetracyclines | Tetracyclin | 2 | 83 | 45 | | | | | 1 | 6 | 10 | 13 | 6 | 2 | 1 | 4 | 40 | | | | | | | | | | |

Table Antimicrobial susceptibility testing of *C. jejuni* in *Gallus gallus* (fowl) - at slaughterhouse - Survey - EU baseline survey - quantitative data
[Dilution method]

| C. jejuni Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials: | | Gallus gallus (fowl) - at slaughterhouse - Survey - EU baseline survey | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|--|----|----|---------|-------|------|------|------|------|-----|----|----|----|----|----|----|----|-----|-----|-----|------|------|-------|--------|---------|--|
| | | yes | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 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 | 40 | 9 | | | | | | 2 | 18 | 11 | 3 | 1 | | 5 | | | | | | | | | | | |
| | Streptomycin | 2 | 40 | 31 | | | | | | | | | 9 | 14 | 6 | 1 | | 10 | | | | | | | | | |
| Fluoroquinolones | Ciprofloxacin | 1 | 40 | 31 | | | | | 1 | 3 | 4 | 1 | 2 | 2 | 27 | | | | | | | | | | | | |
| Macrolides | Erythromycin | 4 | 40 | 6 | | | | | | | 5 | 11 | 11 | 7 | | | | 6 | | | | | | | | | |
| Penicillins | Ampicillin | | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Quinolones | Nalidixic acid | | 40 | 40 | | | | | | | | | 3 | 2 | 2 | 3 | 1 | 29 | | | | | | | | | |
| Tetracyclines | Tetracyclin | 2 | 40 | 29 | | | | | 1 | 3 | 5 | 2 | | 1 | 4 | 24 | | | | | | | | | | | |

Table Antimicrobial susceptibility testing of C. jejuni - qualitative data

| C. jejuni | | Gallus gallus (fowl) - at slaughterhouse - Survey - EU baseline survey | |
|--|---------------|--|----|
| Isolates out of a monitoring program (yes/no) | | yes | |
| Number of isolates available in the laboratory | | 40 | |
| Antimicrobials: | | N | n |
| Aminoglycosides | Gentamicin | 40 | 9 |
| | Streptomycin | 40 | 31 |
| Fluoroquinolones | Ciprofloxacin | 40 | 31 |
| Macrolides | Erythromycin | 40 | 6 |
| Tetracyclines | Tetracyclin | 40 | 29 |

Table Antimicrobial susceptibility testing of Campylobacter in humans

| | | | |
|---|--------------|--------|---|
| Campylobacter spp., unspecified Isolates out of a monitoring program (yes/no) Number of isolates available in the laboratory Antimicrobials: | | humans | |
| | | no | |
| | | 22 | |
| | | N | n |
| Macrolides | Erythromycin | 22 | 0 |

Table Breakpoints used for antimicrobial susceptibility testing

| Test Method Used | | Standards used for testing | | | | | | | | | |
|------------------|----------------------------------|----------------------------|--|--|--|--|--|--|--|--|--|
| Disc diffusion | <input type="radio"/> | VetMIC | | | | | | | | | |
| Agar dilution | <input type="radio"/> | | | | | | | | | | |
| Broth dilution | <input checked="" type="radio"/> | | | | | | | | | | |
| E-test | <input type="radio"/> | | | | | | | | | | |

| | | Standard for breakpoint | Breakpoint concentration (microg/ml) | | | Range tested concentration (microg/ml) | | Disk content microg | Breakpoint Zone diameter (mm) | | |
|------------------|----------------|-------------------------|--------------------------------------|--------------|-------------|--|---------|---------------------|-------------------------------|--------------|--------------|
| | | | Susceptible <= | Intermediate | Resistant > | lowest | highest | | Susceptible >= | Intermediate | Resistant <= |
| Aminoglycosides | Gentamicin | 16 | | | | 0.12 | 16 | | | | |
| | Streptomycin | | | | | 0.5 | 64 | | | | |
| Fluoroquinolones | Ciprofloxacin | 8 | | | | 0.06 | 8 | | | | |
| Macrolides | Erythromycin | 64 | | | | 0.5 | 64 | | | | |
| Quinolones | Nalidixic acid | | | | | 1 | 64 | | | | |
| Tetracyclines | Tetracyclin | | | | | 0.12 | 16 | | | | |

Table Breakpoints used for antimicrobial susceptibility testing

| Test Method Used | | Standards used for testing | | | | | | | | | |
|------------------|----------------------------------|----------------------------|--|--|--|--|--|--|--|--|--|
| Disc diffusion | <input type="radio"/> | VetMIC | | | | | | | | | |
| Agar dilution | <input type="radio"/> | | | | | | | | | | |
| Broth dilution | <input checked="" type="radio"/> | | | | | | | | | | |
| E-test | <input type="radio"/> | | | | | | | | | | |

| | | Standard for breakpoint | Breakpoint concentration (microg/ml) | | | Range tested concentration (microg/ml) | | Disk content microg | Breakpoint Zone diameter (mm) | | |
|------------------|----------------|-------------------------|--------------------------------------|--------------|-------------|--|---------|---------------------|-------------------------------|--------------|--------------|
| | | | Susceptible <= | Intermediate | Resistant > | lowest | highest | | Susceptible >= | Intermediate | Resistant <= |
| Aminoglycosides | Gentamicin | 16 | | | | 0.12 | 16 | | | | |
| | Streptomycin | | | | | 0.5 | 64 | | | | |
| Fluoroquinolones | Ciprofloxacin | 8 | | | | 0.06 | 8 | | | | |
| Macrolides | Erythromycin | 64 | | | | 0.5 | 64 | | | | |
| Quinolones | Nalidixic acid | | | | | 1 | 64 | | | | |
| Tetracyclines | Tetracyclin | | | | | 0.12 | 16 | | | | |

Table Breakpoints used for antimicrobial susceptibility testing

| Test Method Used | | Standards used for testing | | | | | | | | | |
|------------------|-----------------------|----------------------------|--|--|--|--|--|--|--|--|--|
| Disc diffusion | <input type="radio"/> | NCCLS | | | | | | | | | |
| Agar dilution | <input type="radio"/> | | | | | | | | | | |
| Broth dilution | <input type="radio"/> | | | | | | | | | | |
| E-test | <input type="radio"/> | | | | | | | | | | |

| | | | Breakpoint concentration (microg/ml) | | | Range tested concentration (microg/ml) | | Disk content | Breakpoint Zone diameter (mm) | | |
|------------|--------------|-------------------------|--------------------------------------|--------------|-------------|--|---------|--------------|-------------------------------|--------------|--------------|
| | | Standard for breakpoint | Susceptible <= | Intermediate | Resistant > | lowest | highest | microg | Susceptible >= | Intermediate | Resistant <= |
| Macrolides | Erythromycin | | 4 | | 4 | 0.16 | 256 | | | | |

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

2.3.2 Listeriosis in humans

Table Listeria in humans - Species/serotype distribution

| Listeria | Cases | Cases Inc. |
|------------------|-------|------------|
| | 0 | 0 |
| Listeria spp. | 0 | 0 |
| Congenital cases | 0 | 0 |
| Deaths | 0 | 0 |

Table Listeria in humans - Age distribution

| Age Distribution | L. monocytogenes | | | Listeria spp. | | |
|--------------------|------------------|---|---|---------------|---|---|
| | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 | 0 | 0 | 0 |

2.3.3 Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for L.monocytogenes | Units tested with detection method | Listeria monocytogenes presence in x g | Units tested with enumeration method | > detection limit but ≤ 100 cfu/g | L. monocytogenes > 100 cfu/g |
|---|-----------------------|---------------|---------------|--------------|--|------------------------------------|--|--------------------------------------|-----------------------------------|------------------------------|
| Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - at retail - Monitoring - official sampling - objective sampling | Laboratory | batch | | 654 | 0 | | | | | |

2.4 E. COLI INFECTIONS

2.4.1 General evaluation of the national situation

2.4.2 E. coli infections in humans

Table Escherichia coli, pathogenic in humans - Age distribution

| Escherichia coli, pathogenic | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|-------------------------------------|--------------|-------------------|--------------------------|-------------------------|-----------------------|----------------------|
| | 0 | 0 | 0 | 0 | 0 | 0 |
| HUS | 0 | 0 | 0 | 0 | 0 | 0 |
| - clinical cases | 0 | 0 | 0 | 0 | 0 | 0 |
| - lab. confirmed cases | 0 | 0 | 0 | 0 | 0 | 0 |
| - caused by O157 (VT+) | 0 | 0 | 0 | 0 | 0 | 0 |
| - caused by other VTEC | 0 | 0 | 0 | 0 | 0 | 0 |
| - clinical cases | 14 | 3.4 | 13 | 3.2 | 1 | 0.24 |
| - laboratory confirmed | 14 | 3.4 | 13 | 3.2 | 1 | 0.24 |
| - caused by 0157 (VT+) | 8 | 2 | 8 | 2 | 0 | 0 |
| - caused by other VTEC | 3 | 0.7 | 2 | 0.5 | 1 | 0.24 |

Table Escherichia coli, pathogenic in humans - Species/serotype distribution

| Age Distribution | Verotoxigenic E. coli (VTEC) | | | VTEC O157:H7 | | | VTEC non-O157 | | |
|--------------------|------------------------------|---|---|--------------|---|---|---------------|---|---|
| | All | M | F | All | M | F | All | M | F |
| <1 year | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 1 | 0 | 1 | 2 | 1 | 1 | 4 | 1 | 3 |
| 5 to 14 years | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total: | 2 | 0 | 2 | 8 | 4 | 4 | 4 | 1 | 3 |

2.4.3 Escherichia coli, pathogenic in animals

2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1 General evaluation of the national situation

2.5.2 Tuberculosis, mycobacterial diseases in humans

Table Mycobacterium in humans - Species/serotype distribution

| Mycobacterium | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|-----------------|-------|------------|-------------------|------------------|----------------|---------------|
| | 64 | 15.6 | 19 | 4.6 | 45 | 10.9 |
| M. bovis | 0 | 0 | 0 | 0 | 0 | 0 |
| M. tuberculosis | 64 | 15.6 | 19 | 4.6 | 45 | 10.9 |

Table Mycobacterium in humans - Age distribution

| Age Distribution | M. bovis | | | M. tuberculosis | | |
|--------------------|----------|---|---|-----------------|----|----|
| | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 1 | 1 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 15 | 13 | 2 |
| 25 to 44 years | 0 | 0 | 0 | 15 | 14 | 1 |
| 45 to 64 years | 0 | 0 | 0 | 4 | 2 | 2 |
| 65 years and older | 0 | 0 | 0 | 9 | 7 | 2 |
| Age unknown | 0 | 0 | 0 | 20 | 17 | 3 |
| Total: | 0 | 0 | 0 | 64 | 54 | 10 |

Footnote:

It should be noted that human cases of TB include pulmonary and non-pulmonary cases, while 73% of the cases were in migrants of African origin.

2.5.3 Mycobacterium in animals

Table Tuberculosis in other animals

| | Source of information | Sampling unit | Units tested | Total units positive for Mycobacterium spp. | M. bovis | M. tuberculosis | Mycobacterium spp., unspecified |
|--|-----------------------|---------------|--------------|---|----------|-----------------|---------------------------------|
| Goats - - blood - Control and eradication programmes - official sampling (587) ¹⁾ | | flock | 23 | 0 | | | |

Comments:

¹⁾ All caprine animals over 6 months present on dairy farms are tested

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 | | | |
| Malta | 150 | 15604 | 150 | 100 | 0 | 0 | 5 | 7815 | 0 | 1 | 0 |
| Total | 150 | 15604 | 150 | 100.0 | 0 | 0.0 | 5 | 7815 | 0 | 1 | 0 |
| Total - 1 | | | | | | | | | | | |

Footnote:

Animals are tested every 6 months. Tb testing is carried out on only those farms that are milk producers that total to 150 herds. The rest of the herds consist of mainly ovine caprine herds which also have a few bovine animals that are kept for fattening. These units have mainly males for meat production.

Table Tuberculosis in farmed deer

Footnote:

No farmed deer present in Malta

2.6 BRUCELLOSIS

2.6.1 General evaluation of the national situation

2.6.2 Brucellosis in humans

Table Brucella in humans - Species/serotype distribution

| Brucella | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|--------------------|-------|------------|-------------------|------------------|----------------|---------------|
| | 0 | 0 | 0 | 0 | 0 | 0 |
| B. abortus | 0 | 0 | 0 | 0 | 0 | 0 |
| B. melitensis | 0 | 0 | 0 | 0 | 0 | 0 |
| B. suis | 0 | 0 | 0 | 0 | 0 | 0 |
| Occupational cases | 0 | 0 | 0 | 0 | 0 | 0 |

Table Brucella in humans - Age distribution

| Age Distribution | B. abortus | | | B. melitensis | | | Brucella spp. | | |
|--------------------|------------|---|---|---------------|---|---|---------------|---|---|
| | All | M | F | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

2.6.3 Brucella in animals

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 serologic al blood tests | Number of suspende d herds | Number of positive animals | | Number of animals examined microbio logically | Number of animals positive microbio logically |
| | | | | | | | | | | | | | | | | | | Sero logically | BST | | |
| Malta | 352 | 17448 | 349 | 99.15 | 3 | .85 | 352 | 13036 | 3 | 310 | 310 | 0 | 0 | 0 | 0 | 13036 | 0 | 3 | 0 | 1 | 0 |
| Total | 352 | 17448 | 349 | 99.15 | 3 | 0.85 | 352 | 13036 | 3 | 310 | 310 | 0 | 0 | 0 | 0 | 13036 | 0 | 3 | 0 | 1 | 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 microbiologically | Number of animals positive microbiologically | Number of suspended herds |
| Malta | 1835 | 19344 | 1827 | 99.56 | 5 | .27 | 1941 | 15486 | 5 | 15486 | 7 | 1 | 0 | 0 |
| Total | 1835 | 19344 | 1827 | 99.56 | 5 | 0.27 | 1941 | 15486 | 5 | 15486 | 7 | 1 | 0 | 0 |
| Total - 1 | | | | | | | | | | | | | | |

Footnote:

Data relative to ovicaprine herds

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

2.7.2 Yersiniosis in humans

Table Yersinia in humans - Species/serotype distribution

| Yersinia | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|-------------------|-------|------------|-------------------|------------------|----------------|---------------|
| | 0 | 0 | 0 | 0 | 0 | 0 |
| Y. enterocolitica | 0 | 0 | 0 | 0 | 0 | 0 |
| O:3 | 0 | 0 | 0 | 0 | 0 | 0 |
| O:9 | 0 | 0 | 0 | 0 | 0 | 0 |

Table Yersinia in humans - Age distribution

| Age Distribution | Y. enterocolitica | | | Yersinia spp. | | |
|--------------------|-------------------|---|---|---------------|---|---|
| | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 | 0 | 0 | 0 |

Table Yersinia in humans - Seasonal distribution

| Month | Y. enterocoli tica | Yersinia spp. |
|-----------|--------------------------|------------------|
| | Cases | Cases |
| January | 0 | 0 |
| February | 0 | 0 |
| March | 0 | 0 |
| April | 0 | 0 |
| May | 0 | 0 |
| June | 0 | 0 |
| July | 0 | 0 |
| August | 0 | 0 |
| September | 0 | 0 |
| October | 0 | 0 |
| November | 0 | 0 |
| December | 0 | 0 |
| not known | 0 | 0 |
| Total: | 0 | 0 |

2.7.3 Yersinia in animals

2.8 TRICHINELLOSIS

2.8.1 General evaluation of the national situation

2.8.2 Trichinellosis in humans

Table Trichinella in humans - Species/serotype distribution

| Trichinella | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|------------------|-------|------------|-------------------|------------------|----------------|---------------|
| | 0 | 0 | 0 | 0 | 0 | 0 |
| Trichinella spp. | 0 | 0 | 0 | 0 | 0 | 0 |

Table Trichinella in humans - Age distribution

| Age Distribution | Trichinella spp. | | |
|--------------------|------------------|---|---|
| | All | M | F |
| <1 year | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 |

2.8.3 Trichinella in animals

2.9 ECHINOCOCCOSIS

2.9.1 General evaluation of the national situation

2.9.2 Echinococcosis in humans

Table Echinococcus in humans - Species/serotype distribution

| Echinococcus | Cases | Cases Inc. | Autochth on cases | Autochth on Inc. | Imported cases | Imported Inc. |
|-------------------|-------|------------|-------------------|------------------|----------------|---------------|
| | 0 | 0 | 0 | 0 | 0 | 0 |
| E. granulosus | 0 | 0 | 0 | 0 | 0 | 0 |
| E. multilocularis | 0 | 0 | 0 | 0 | 0 | 0 |
| Echinococcus spp. | 0 | 0 | 0 | 0 | 0 | 0 |

Table Echinococcus in humans - Age distribution

| Age Distribution | E. granulosus | | | E. multilocularis | | | Echinococcus spp. | | |
|--------------------|---------------|---|---|-------------------|---|---|-------------------|---|---|
| | All | M | F | All | M | F | All | M | F |
| <1 year | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

2.10.2 Toxoplasmosis in humans

Table Toxoplasma in humans - Species/serotype distribution

| Toxoplasma | Cases | Cases Inc. |
|------------------|-------|------------|
| | 0 | 0 |
| Toxoplasma spp. | 0 | 0 |
| Congenital cases | 0 | 0 |

Table Toxoplasma in humans - Age distribution

| Age Distribution | Toxoplasma spp. | | |
|--------------------|-----------------|---|---|
| | All | M | F |
| <1 year | 0 | 0 | 0 |
| 1 to 4 years | 0 | 0 | 0 |
| 5 to 14 years | 0 | 0 | 0 |
| 15 to 24 years | 0 | 0 | 0 |
| 25 to 44 years | 0 | 0 | 0 |
| 45 to 64 years | 0 | 0 | 0 |
| 65 years and older | 0 | 0 | 0 |
| Age unknown | 0 | 0 | 0 |
| Total: | 0 | 0 | 0 |

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

Last reported rabies case at the beginning of the 20th century!

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

Rabies is still a notifiable disease in Malta.

ECDC definition holds

2.11.3 Lyssavirus (rabies) in animals

2.12 Q-FEVER

2.12.1 General evaluation of the national situation

A. Coxiella burnetii (Q-fever) general evaluation

History of the disease and/or infection in the country

No reported cases in recent years.

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

3.2.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

Table Antimicrobial susceptibility testing of E. coli in humans

| E. coli | | humans | |
|--|-----------------------------|--------|---|
| Isolates out of a monitoring program (yes/no) | | no | |
| Number of isolates available in the laboratory | | 14 | |
| Antimicrobials: | | N | n |
| Aminoglycosides | Gentamicin | 11 | 0 |
| Fluoroquinolones | Ciprofloxacin | 11 | 0 |
| Penicillins | Ampicillin | 11 | 1 |
| Trimethoprim | Trimethoprim | 11 | 0 |
| Trimethoprim + sulfonamides | Trimethoprim + sulfonamides | 0 | 0 |

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 HISTAMINE

4.1.1 General evaluation of the national situation

4.1.2 Histamine in foodstuffs

4.2 ENTEROBACTER SAKAZAKII

4.2.1 General evaluation of the national situation

4.2.2 Enterobacter sakazakii in foodstuffs

Table Enterobacter sakazakii in food

| | Source of information | Sampling unit | Sample weight | Units tested | Total units positive for Enterobacter sakazakii | E. sakazakii |
|--|-----------------------|---------------|---------------|--------------|---|--------------|
| Infant formula - dried - at retail - imported - Surveillance | laboratory | batch | 25g | 28 | 0 | |

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

4.3.2 Staphylococcal enterotoxins in foodstuffs

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.

Foodborne Outbreaks: summarized data

| | Total number of outbreaks | Outbreaks | Human cases | Hospitalized | Deaths | Number of verified outbreaks |
|------------------------------|---------------------------|-----------|-------------|--------------|--------|------------------------------|
| Bacillus | 0 | 0 | 0 | 0 | 0 | 0 |
| Campylobacter | 7 | 7 | 18 | 3 | 0 | 0 |
| Clostridium | 0 | 0 | 0 | 0 | 0 | 0 |
| Escherichia coli, pathogenic | 2 | 2 | 4 | 2 | 0 | 0 |
| Foodborne viruses | 3 | 3 | 142 | 0 | 0 | 0 |
| Listeria | 0 | 0 | 0 | 0 | 0 | 0 |
| Other agents | 0 | 0 | 0 | 0 | 0 | 0 |
| Parasites | 0 | 0 | 0 | 0 | 0 | 0 |
| Salmonella | 19 | 19 | 48 | 9 | 0 | 0 |
| Staphylococcus | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 33 | 33 | 162 | 3 | 0 | 0 |
| Yersinia | 0 | 0 | 0 | 0 | 0 | 0 |