

Overview of 2012 Zoonoses Data

In 2012, a total of 20,855 tests were performed on food samples (comprising single and batch¹ samples) for a range of zoonotic bacteria and other microbiological contaminants.

Campylobacteriosis

Humans

- A total of 2,388 cases of campylobacteriosis were notified in Ireland in 2012 (crude incidence rate² (CIR) of 52.1 per 100,000 population) which is similar to the previous year (52.9 cases per 100,000 population). The EU average CIR for 2012 was 55.5 per 100,000 population.
- Four outbreaks of campylobacteriosis (with 13 associated cases of illness) were reported in 2012. Two outbreaks were suspected to be foodborne, but the transmission route of the remaining two outbreaks was unknown.

Food

- Of the 1,317 food samples tested for *Campylobacter* in 2012, only one raw broiler meat sample was positive.

Animals

- Out of 3,815 animal samples tested for *Campylobacter*, 7.7% (n=293) were positive. These included samples from cattle (n=281), sheep (n=10), solipeds (n=1) and pigs (n=1).
- All 293 isolates were identified as *Campylobacter jejuni*.

Salmonellosis

Humans

- In 2012, 314 cases of salmonellosis were notified in Ireland (6.8 cases per 100,000 population); similar to the 311 cases notified in 2011 (6.8 cases per 100,000 population). Ireland's CIR for 2012 was below the EU average for 2012 (22.2 cases per 100,000 population).
- Of 319 *Salmonella* clinical isolates referred for typing in 2012, the most common serotypes were *Salmonella* Typhimurium (n=122, 38.2%) and *Salmonella* Enteritidis (n=56, 17.6%). In total, 151 (47%) of these clinical isolates were resistant to one or more antibiotic.
- Six outbreaks of salmonellosis (with 39 associated cases of illness) were reported in 2012. Food was a suspected mode of transmission in three outbreaks, animal contact in one outbreak, and the transmission mode for the remaining two outbreaks was unknown.

Food

- A total of 9,180 food samples were tested for *Salmonella* in 2012.
- *Salmonella* was not detected in RTE meat samples (n=2,631). One (0.7%) out of 140 raw meat samples and 31 (1.5%) out of 2,107 meat samples of unspecified RTE status were positive for

¹Batch samples comprise of one or more food samples analysed individually, but reported as one unit. If one food sample within a batch is positive, the batch is recorded as positive.

²The crude incidence rate (CIR) is the rate at which new cases occur in a population in a specific period. CIR's for Ireland were calculated using the 2011 census data (population of Ireland: 4,588,252).

Salmonella. Positive meat samples included broiler meat, duck meat, pork and beef. Species identified included *S. Kentucky*, *S. Brandenburg*, *S. Typhimurium*, *S. Schwarzengrund*, *S. Orion* and *S. Dublin*.

- Of other non-meat foods analysed, 0.22% (6 out of 2,767) of foods with unspecified RTE status were positive for *Salmonella* (unspecified *Salmonella* spp. (n=5) and *S. Jodburgh* (n=1)).

Animals

- In 2012, 0.4% (3 out of 744) of breeding and commercial flocks were positive for *Salmonella*. All three positives were from turkey flocks. *Salmonella* was not detected in any of the 280 feed material samples analysed in 2012.
- Out of 16,417 other animals tested for *Salmonella*, 1.9% (n=391) were positive. These included samples taken from cattle, sheep, pigs, horses, dogs, birds and goats. Species identified included *S. Dublin* (n=346), *S. Typhimurium* (n=36), unspecified *Salmonella* spp. (n=4), *S. Enteritidis* (n=1), *S. Newport* (n=1), *S. enterica* subsp. *diarizonae* (n=1), *S. Mbandaka* (n=1), *S. enterica* subsp. *arizonae* (n=1).
- High levels of antimicrobial resistance were recorded in *S. Typhimurium* recovered from pigs in 2012: 74% to ampicillin, 95% to streptomycin, 95% to sulphonamides, 95% to tetracycline, 11% to trimethoprim and 11% to gentamycin.

Cryptosporidiosis

Humans

- In 2012, 556 cases of cryptosporidiosis were notified in Ireland (12.1 cases per 100,000 population) which is an increase on the 428 cases reported in 2011 (9.3 cases per 100,000 population).
- The 2012 human notification rate for cryptosporidiosis in the EU will be available in the European Centre for Disease Control (ECDC) Annual Epidemiological Report 2014³.
- Twenty four cryptosporidiosis outbreaks (with 71 associated illnesses) were reported in 2012. Food was not a suspected mode of transmission in any of these outbreaks.

VTEC

Humans

- There were 554 cases of VTEC infection notified in Ireland in 2012 (12.1 cases per 100,000 population), a 95% increase on the 28 cases notified in 2011 (6.2 cases per 100,000 population).
- Thirty two (5.8%) VTEC cases developed HUS in 2012.
- The EU average CIR for 2012 was 1.15 per 100,000 population. Ireland reported the highest rate in the EU⁴.
- Of the 535 clinical VTEC isolates referred for subtyping, 43% (n=229) were *E. coli* O157 and 39% (n=207) were *E. coli* O26.
- Ninety seven VTEC outbreaks (with 283 associated illnesses) were reported in 2012. Food was suspected to be involved in three of these outbreaks. In Ireland, the most common mode of

³ http://www.ecdc.europa.eu/en/publications/surveillance_reports/annual_epidemiological_report/Pages/epi_index.aspx

⁴ In interpreting numbers of human VTEC cases in comparison with other EU Member States, readers should be aware that Ireland has an active approach to VTEC case contact tracing and testing and also its clinical laboratories use PCR-based methods for diagnosis.

VTEC transmission is person-to-person spread (particularly between young children) followed by waterborne transmission (in particular private wells).

Food

- Two out of 1,060 food samples tested were positive for VTEC in 2012. *E. coli* O157 was identified in minced beef and *E. coli* O26 was identified in a RTE food categorised under processed food products and prepared dishes.

Listeriosis

Humans

- Eleven cases of listeriosis were notified in Ireland in 2012 (0.2 cases per 100,000 population). This is higher than reported in 2011 (7 cases, 0.2 cases per 100,000 population). Listeriosis in Ireland is below the 2012 EU average CIR which was reported at 0.4 per 100,000 population for 2012.
- There was one pregnancy-related case which resulted in miscarriage and two neonatal cases which resulted in blood infections of both infants. Of the eight adult cases, seven were older than 65 years of age, with the eighth case in the 55-64 years age group.
- No listeriosis outbreaks were reported in 2012.

Food

- In 2012, a total of 9,092 food samples were tested for *Listeria monocytogenes* by the detection method (presence or absence) or the enumeration method (>100 cfu/g). The number of samples tested by both the enumeration and detection method was not known; therefore the results are described separately.
- Of 1,779 meat samples tested by the detection method, *L. monocytogenes* was detected in 27 (1.5%) samples, 19 of which were RTE meat products (beef, pork, poultry and mixed meats) from retail and processing.
- Of 2,235 meat samples tested by the enumeration method, *L. monocytogenes* was found at >100 cfu/g in twelve samples, ten of which were RTE meat products.
- Of 1,915 other foods tested by the detection method, *L. monocytogenes* was detected in 87 (4.5%) samples; eleven were RTE foods and 73 were unspecified. Positive samples included bakery products, cereals and meals, milk, cheese, fish, fruit and vegetable products and RTE salads.
- Of 3,163 other food samples tested by the enumeration method, *L. monocytogenes* was found at >100 cfu/g in twelve samples, two of which were RTE foods and the remaining ten were unspecified.

Animals

- In 2012, 0.6% (n=107) out of 16,995 animal samples tested for *Listeria* were positive. Positive samples were from cattle (n=80) and sheep (n=27). Species identified included *L. monocytogenes* (n=102), unspecified *Listeria* spp. (n=3) and *L. ivanovii* (n=2).

Tuberculosis

Humans

- In 2012, 364 cases of tuberculosis were notified in Ireland (8.0 cases per 100,000 population), which is less than were notified in 2011 (413 cases, 9.0 cases per 100,000 population).
- The 2012 notification rate for human TB in the EU will be available in the ECDC Annual Epidemiological Report 2014³.
- *Mycobacterium tuberculosis* was identified in 96.1% (n=270) of the culture confirmed cases for 2012.
- Three cases of *Mycobacterium bovis* associated TB were reported in 2012 (0.07 cases per 100,000 population), which is a decrease on the six cases reported in Ireland in 2011 (0.1 cases per 100,000 population).

Animals

- In 2012, 4.3% of herds were positive for TB compared to 4.2% in 2011.
- Of 2,654 other animals tested for *Mycobacterium* in 2012, 14.1% (n=374) were positive. Animals testing positive included deer (33.8%, 27 out of 80 samples), sheep (21.7%, 5 out of 23 samples) and badgers (13.3%, 335 out of 2,527 samples).
- Of the 374 positive animal samples, *M. bovis* was the most prevalent species identified (75.4%, n=282), followed by unspecified *Mycobacterium* spp. (23.5%, n=88) and *M. avium* (1.07%, n=4).

Brucellosis

Humans

- Two cases of brucellosis were reported in humans in 2012 (0.04 cases per 100,000 population) compared to one case in 2011. The EU notification rate for 2012 was 0.07 cases per 100,000 population.

Animals

- Tests of 3,053 bovine herds in 2012 were negative for *Brucella*. The last confirmed case of brucellosis in cattle in Ireland was in 2006.

vCJD, BSE and TSE

Humans

- No new vCJD cases were notified in Ireland in 2012. The last case of vCJD was notified in 2006.

Animals

- Three cases of BSE in cattle were reported in 2012, which is the same as for 2011.
- In 2012, 12 (0.06%) out of 21,361 sheep tested were positive for scrapie.

Toxoplasmosis

Humans

- There were 36 toxoplasmosis notifications in humans in 2012 (0.8 cases per 100,000 population), four more than the previous year (32 cases, 0.7 cases per 100,000 population).
- One congenital case was reported. The remaining 35 cases ranged in age from 15 to 61 years. The high number of cases in women of childbearing age is most likely due to routine testing for toxoplasmosis during pregnancy.
- The crude incidence rate of congenital toxoplasmosis in Ireland in 2012 was 0.02 cases per 100,000 population.
- The 2012 human notification rate for congenital toxoplasmosis in the EU will be available in the ECDC Annual Epidemiological Report 2014³.

Animals

- *Toxoplasma gondii* was detected in 9.6% (101 out of 1,054) of animals tested. One hundred of the positive samples were from sheep and one was from a wallaby.

Leptospirosis

Humans

- There were 15 notifications of leptospirosis in humans in 2012 (0.3 cases per 100,000 population); one less than reported in 2011 (16 notifications, 0.4 cases per 100,000 population).
- The 2012 human notification rate for leptospirosis in the EU will be available in the ECDC Annual Epidemiological Report 2014³.

Others

Human

- No human cases of trichinellosis were notified in Ireland in 2012. The EU notification rate for this year was 0.06 cases per 100,000 population.
- There were two cases of yersiniosis (0.04 cases per 100,000 population) in 2012, compared to six cases in 2011. The 2012 human notification rate for yersiniosis in the EU will be available in the ECDC Annual Epidemiological Report 2014³.
- No cases of echinococcosis were notified in Ireland in 2012. The 2012 human notification rate for echinococcosis in the EU will be available in the ECDC Annual Epidemiological Report 2014³.
- Six cases of Q fever were reported in 2012 (0.13 cases per 100,000 population); one more than the previous year. The EU notification rate for 2012 was 0.17 cases per 100,000 population.

Animal

- Of 15,996 animals tested for *Yersinia* spp., 0.02% (n=3) were positive. *Yersinia pseudotuberculosis* was identified in two samples while the remaining one was an unspecified *Yersinia* spp.
- Two out of 3,000,617 tests carried out for *Trichinella* in animals were positive. Both samples were from foxes and were identified as *Trichinella spiralis*.

- *Staphylococcus* was detected in 7.59% (1,227 out of 16,172) of animals tested in 2012. *Staphylococcus aureus* was identified in one sample from a dog, while the species of the remaining 1,226 samples were unspecified.
- *Coxiella* (Q fever) was detected in 4.83% (20 out of 414) of animals tested in 2012. All 20 positives were from cattle and were identified as *Coxiella burnetii*.