ZOONOSES MONITORING

Reporting information in free-text forms

The free-text forms are meant to describe in a narrative text the monitoring/surveillance and/or control programmes for each zoonotic agent for which data are submitted. The text should facilitate the interpretation of the results in the correct context and, where possible, the comparison of results between reporting years (trend analysis). In addition, the possible sources of zoonotic agents should be evaluated, particularly in relation to the detection of zoonotic agents in food, animals and feed and their relevance to human cases and/or outbreaks.

Information on zoonoses listed in Directive 2003/99/EC can be reported in the free-text forms. The requirements for the content of the annual national reports on zoonoses are laid down in Directive 2003/99/EC Annex IV.

National overview information should be reported as narrative text that includes concise but complete and comprehensible descriptions of the general evaluation of the AMR situation and the implementation of the AMR monitoring programme from which the reported data derive. The reporting of overview information ensures that the data and results are analysed, understood and interpreted correctly. The description should be detailed enough to give an accurate picture of the situation and the monitoring activities in place and to facilitate, where possible, a comparison of the results between different reporting years and countries. The harmonised text forms, whose titles are provided in the word template and listed below, should be used to report the necessary information and draft the narrative parts of the national reports.

Please note that the reason for not reporting AMR data for a specific animal population or meat category included in the mandatory monitoring, should be stated in the text form. For example, if the production of meat from turkey or meat from cattle under one year of age in the Member State is less than 10,000 tonnes per year and therefore monitoring of these animal categories is not mandatory or if no consignments of fresh meat of a specific animal category were not received by the Member State.

The paragraphs from the **AMR section**, '**Description of sampling design and strategy'**, **'Stratification procedure per animal population and food category'** and **'Randomisation procedure per animal population and food category'** are mandatory under Commission Implementing Decision (EU) 2020/1729.

1. For each **zoonotic agent for which data are reported** the "**General evaluation" section should be included and fill in** (the templates for the 8 mandatory ones are included in the template).
2. **For each zoonotic agent and relevant matrix for which data are reported the "Description of monitoring/surveillance/control programmes system" section should be included and fill in** (the templates for the 8 mandatory zoonoses and the relevant matrices are included in the template)**.**
3. For AMR the mandatory matrices and bacteria have been included. However, in case that AMR data is reported for other combination of bacteria/matrix, the relevant information should be added (the templates for the mandatory bacteria and the mandatory animal populations and derived meat are included in the template).
4. In the final document please remove these pages.
5. Use Verdana 10 as the font.

ZOONOSES MONITORING

THE UNITED KINGDOM (NORTHERN IRELAND)

TEXT FORMS FOR THE TRENDS AND SOURCES OF ZOONOSES AND ZOONOTIC AGENTS IN FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

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

IN 2024

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1. Institutions and Laboratories involved in Zoonoses monitoring and reporting[1]

The Official Laboratories (OLs) are divided into:

OLs for feed and food (Northern Ireland Competent Authorities are FSA NI and DAERA)

OLs for animal health and live animals (Northern Ireland Competent Authority is DAERA)

Institutions and Laboratories involved in zoonoses monitoring and reporting

Agri-Food and Biosciences Institute

Agriculture, Food and Environmental Science Division, Food Microbiology Unit, Bacteriology Branch, Newforge Lane, Belfast, BT9 5PX

www.afbini.gov.uk

Agri-Food and Biosciences Institute

Veterinary Sciences Division, Stoney Road, Stormont, Belfast, BT4 3SD

www.afbini.gov.uk

Department of Agriculture, Environment and Rural Affairs (Northern Ireland) (DAERA)

Jubilee House, 111 Ballykelly Road, Ballykelly, Limavady, BT49 9HP

www.daera-ni.gov.uk

Department of Health (Northern Ireland)

Castle Buildings, Stormont, Belfast, BT4 3SQ

www.health-ni.gov.uk

Food Standards Agency Northen Ireland (FSA NI)

10a-c Clarendon Road, Belfast, BT1 3BG

www.food.gov.uk

Public Health Agency (Northern Ireland)

Linenhall Street Unit, 12-22 Linenhall Street, Belfast, BT2 8BS

www.publichealth.hscni.net

[1] A short description of the institutions and laboratories involved in data collection and reporting should be provided.

2. Animal population

2.1. Sources of information and the date(s) (months, years) the information relates to[2]

Agricultural Census in Northern Ireland is conducted in June of each year. Data is collected on livestock numbers.

Administrative data is used from the Animal and Public Health Information System (APHIS) its successor NIFAIS cattle tracing system, the Northern Ireland Bird Register Update and the Annual Inventory of Pigs – all complete censuses.

Northern Ireland Agricultural Census 2024

No data/information for NI deer populations as not collected on APHIS nor reported on the Agricultural Census Report. Registration for deer herds is voluntary on APHIS and so any population data reported in this report for farmed deer is approximate, and the only data we have available at this time.

Chicken and turkey flock numbers have been calculated from data collected as part of the Northern Ireland Salmonella National Control Plan in 2023.

2.2. Definitions used for different types of animals, herds, flocks and holdings as well as the production types covered[3]

Cattle (bovine) – Data taken from Northern Ireland Food Animal Information System (NIFAIS), cattle tracing system contains all bovine livestock recorded as at 1st June 2024

Deer – Data taken from Northern Ireland Agricultural and Horticultural census and contains all Farmed Deer recorded as at 1st June 2024.

[2] Describe the source of the reported numbers and figures: e.g. the national identification and registration database and/or official statistics, institutions involve (Eurostat, others). The dates or time period for which the information is reported should be specified: e.g. the number of animals reported are obtained from a census count at the end of the year; the number of animals reported is an average taken at a certain time point of the year or over a period of the year; the number slaughtered animals per year, etc.

[3] Provide clear definitions for the different types of animals as well as for herds/flocks/holdings and, where relevant, the type of production involved.

Poultry – Data taken from the Northern Ireland Bird Register recorded as at1st June 2024:

Breeding flocks - For producing table eggs: Laying birds from point of lay to end of 1st laying cycle

Broilers - Broilers & other table chickens

Laying hens - For producing table eggs: Laying birds from point of lay to end of 1st laying cycle

Laying hens (adult) - For producing table eggs: Growing pullets from day old to point of lay

Poultry (unspecified) – Turkeys, Geese, ducks & other poultry

Pigs – Data taken from the Northern Ireland Pig Inventory recorded as at 1st June 202:

Pigs – breeding animals - Sows in pig, gilts in pig, other sows, boars, maiden gilts

Pigs – fattening - Cull sows being fattened, finisher pigs, weaner pigs, suckling pigs, pet pigs

Small ruminants – Data taken from Northern Ireland Agricultural and Horticultural census and contains livestock recorded as at 1st June 2024

Goats

Sheep

Solipeds, domestic – Data taken from Northern Ireland Agricultural and Horticultural census and contains all horses, ponies and other equines recorded as at 1st June 2024.

Turkeys – Data taken from the Northern Ireland Bird Register recorded as at 1st June 2024.

2.3. National changes of the numbers of susceptible population and trends[4]

Poultry – The total number of poultry on farms remains relatively stable over time.

[4] Provide the description of the national temporal trends (the last five years) in the number of herds/flocks/animals and, where possible, by production type.

Pig - A small number of large, highly productive businesses drive most of the change in this sector in Northern Ireland. Recently figures have shown consistent annual increases.

Beef – Beef cow numbers in Northern Ireland have been relatively stable over the last 3 years following a consistent decline in numbers over the previous decade.

Dairy – Dairy cows continue to see small year on year increases. Primarily driven by increasing herd sizes amongst larger milk producers.

Sheep – The total number of sheep have increased recently but continue to experience year on year fluctuations in line with the volatile price of lamb.

Goats – Goat population in Northern Ireland continues to decline year on year and in 2024 is almost 17 per cent smaller than in 2020.

2.4. Geographical distribution and size distribution of the herds, flocks and holdings[5]

Chapter 6 - https://datavis.nisra.gov.uk/daera/ni-agricultural-census-2024.html

https://data.nisra.gov.uk/product/fs

2.5. Additional information[6]

[5] Provide the description of the national geographical distributions/trends in the number of herds/flocks/animals and, where possible, by production type: e.g. if available, a link to websites with national density maps (animal level and/or herd/flock level); tables with the number of herds and flocks by geographical area.
[6] Include any other relevant information.

3. General evaluation: *Brucella*

3.1. History of the disease and/or infection in the country[7]

- Humans: In Northern Ireland (NI) cases of brucellosis in humans usually occur as a result of infection acquired outside the UK although historically in humans it had been recorded in those whose work may have brought them into close contact with infected cattle.

- Animals: Northern Ireland was granted Officially Free status for Brucella abortus on 6th October 2015 (Commission Implementing Decision (EU) 2015/1784). Brucella melitensis, B. ovis and B. suis have never been recorded in NI.

3.2. Evaluation of status, trends and relevance as a source for humans[8]

During the year 2024, there were no cases of brucellosis in cattle in Northern Ireland, which has retained its Officially Brucellosis Free Status. No sheep or goat herds were confirmed positive for Brucella melitensis during the annual sheep and goat survey in 2024. No cases of B. ovis and B. suis were detected during 2024.

3.3. Any recent specific action in the Member State or suggested for the European Union[9]

There were no cases of Brucellosis in cattle/small ruminants detected in Northern Ireland in the past 5 years. On-going monitoring in place as per section 4 below.

3.4. Additional information

[7] Provide the description of history of the disease, stating whether a disease is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

[8] Provide the epidemiological evaluation (trends and sources) over time until current situation for the different relevant matrixes (food, animal). If relevant specify the official "disease status" (e.g. brucellosis in cattle and small ruminants) for the whole country and/or specific regions within the country.

[9] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

4. Description of Monitoring/Surveillance/Control programmes system: *Brucella* in Bovine animals

4.1. Monitoring/Surveillance/Control programmes system[10]

From 21/04/2021 iELISA has been used to test blood samples to comply with EU Regulation 2016/429 and Annex III of EU delegated Regulation 2020/689. The Complement Fixation and Rose Bengal tests are used as confirmatory tests.

The following surveillance programmes are in place:

- Monthly bulk milk samples are collected and tested from each milking herd supplying a dairy.
- Blood samples are collected and tested from female animals presented for slaughter with a priority given to older cull cows.
- All females and bulls > 1 year old imported from continental Europe are blood sampled post-import.
- Reporting of abortions is a legislative requirement with follow-up blood sampling in all cases.

4.2. Measures in place[11]

Bovine brucellosis is a notifiable disease in Northern Ireland. Vaccination of animals is not allowed. A suspect clinical case or a non-negative result identified via the various surveillance

[10] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission's website. For bovine brucellosis, it is important to report the sample type (because not included in the data model) which could be serum for serological test (RBT, CFT), abortion material, vaginal discharges, milk, lymph nodes or other tissue analysed for the identification of the agent. In addition, For Member States with non-disease-free status from infection with *Brucella abortus*, *B. melitensis* and *B. suis*, a description of the eradication or surveillance system is to be provided.

[11] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a

programmes will be investigated immediately. Blood, milk, placental material and/ or swabs will be collected and tested as appropriate using serological and bacteriological methods. All methods are conducted in accordance with the requirements of the OIE Manual of Diagnostic Tests and Annex III EU Regulation 2020/689. The suspect animal or herd will be placed under official restrictions until the case is resolved. Herds giving non-negative results to the milk ELISA test are subjected to movement restrictions, herd blood testing and epidemiological investigations to negate or confirm disease presence. Cattle sera are tested by serology (indirect ELISA) and non-negative samples are then tested by confirmatory Complement Fixation Test (CFT). Herd movement restrictions stop the movement of animals off the premises, except under the authority of a movement license issued by DAERA., Non-negative serology animals identified are also individually restricted, required to be kept in isolation and retested (by indirect ELISA and CFT) until resolved. Restrictions are lifted when all tests become negative and there are no epidemiological indicators of infection.

Abortions are required to be notified to DAERA, and a restriction notice is issued for these animals, prohibiting their movement off the premises and requiring them to be isolated. The animals are tested using iELISA tests until a negative test result at 21 days post-abortion is obtained.

Where positive serology persists, and an animal(s) is classified as a reactor(s) herd restrictions are imposed and OBF status suspended. The reactor(s) is required to be kept in isolation until slaughtered. Where the presence of Brucella abortus is confirmed by culture of selected tissue samples taken at point of slaughter either:

- all breeding and potential breeding animals (reactors, infected and contact) are valued and slaughtered, or.

- The breeding animals in the herd are subject to a blood testing schedule.

whole on the basis of the recent/current situation The control programmes may be national or regional, and they may be approved nationally or by the Commission based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included when relevant. It is of particular interest to describe whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

The OBF status of the herd is not restored until at least two clear herd tests have been completed, the last test being at least 21 days after any animals pregnant at the time of the outbreak have calved. In practice, this may mean the restriction and testing of all breeding cattle in a herd through an entire calving cycle. Whenever the Officially Brucellosis Free (OBF) status of a dairy herd is suspended, the Environmental Health Department of the Local Authority is informed so that a heat treatment order may be served to ensure all milk is heat treated before human consumption.

Compensation is paid to a limit of 75% of the average market value subject to a ceiling based on market returns. When an animal is intended to be slaughtered, the amount of compensation is based on the market value of the animal. The market value is an amount agreed between the competent authority and the owner of the animal. Where agreement cannot be reached the owner has the option to nominate an independent valuer to value the animal. Where either the competent authority or the owner is dissatisfied with the determination of market value they may submit an appeal to an independent panel.

Investigations into contact with contiguous herds are undertaken to assess the risk of spread of infection. Herds of origin, transit herds or other herds considered to be at risk are tested. Forward tracing is carried out and animals which have left the infected herd since the last negative herd test are tested. Contiguous herds are tested as well as herds with cattle movements to and from the affected herd. Before restrictions can be lifted, the premises have to be cleansed and disinfected with an approved disinfectant and subjected to veterinary inspection.

Where the presence of Brucella spp. is not confirmed by culture the herd remains restricted until two clear serological herd tests have been completed at 30 and 90 days post slaughter of the reactor animal(s).

4.3. Notification system in place to the national competent authority[12]

Yes: Bovine brucellosis a notifiable disease (Brucellosis Control Order (Northern Ireland) 2004) and cases of premature calving's and abortions must be notified to the Competent

[12] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

Authority. In addition, if a suspected *Brucella* organism has been cultured by a Northern Ireland laboratory, it must be reported to the Competent Authority and sent for identification/confirmation to the Brucella National Reference Laboratory under the requirements of the Zoonoses Order 1989 and Zoonoses Order (Northern Ireland) 1991.

4.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[13]

No cases of bovine brucellosis were identified in animals Northern Ireland in 2024. In Northern Ireland, which attained OBF status on 06/10/2015, there have been no confirmed disease breakdowns since February 2012. Human cases of brucellosis that are diagnosed nowadays in Northern Ireland are associated with infection contracted during travel. Historically, in Northern Ireland, cases of *Brucella abortus* were occasionally acquired by those whose work brought them into close contact with infected cattle. The most likely source of any future bovine infection is an imported animal – all breeding animal imports > 1 year old from outside the British Isles are blood sampled post arrival.

4.5. Additional information

No positive findings in animals for past 5 years

[13] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and food, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

5. Description of Monitoring/Surveillance/Control programmes system: *Brucella* in small ruminants

5.1. Monitoring/Surveillance/Control programmes system[14]

Brucellosis is a notifiable disease in sheep and goats and there is a statutory surveillance programme for the disease in Northern Ireland. Northern Ireland is officially free of ovine and caprine brucellosis. Neither *Brucella melitensis* nor *Brucella ovis* have ever been recorded in Northern Ireland.

5.2. Measures in place[15]

A sample of flocks and herds is serologically checked each year using Complement Fixation Tests in the annual Sheep and Goat survey. No sheep or goat herds were identified as infected for *Brucella melitensis* during the annual sheep and goat survey in 2024. In addition, all investigations into sheep and goat abortions from which samples were submitted to Government laboratories for investigation were negative on testing for brucellosis.

[14] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission's website. For small ruminants brucellosis, it is important to report the sample type (because not included in the data model) which could be serum for serological test (RBT, CFT), abortion material, vaginal discharges, milk, lymph nodes or other tissue analysed for the identification of the agent. In addition, For Member States with non-disease-free status from infection with *Brucella abortus*, *B. melitensis* and *B. suis*, a description of the eradication or surveillance system is to be provided.

[15] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included when relevant. It is of particular interest to describe whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

5.3. Notification system in place to the national competent authority[16]

Yes: Brucellosis and Ovine epididymitis caused by *Brucella ovis* are notifiable in sheep and goats and suspect cases of disease must be notified to the Competent Authority. This should mean that disease caused by any *Brucella* spp. in these species in NI will be notified or reported. In addition, if a suspected *Brucella* organism has been cultured by NI laboratory, it must be reported to the Competent Authority and sent for identification to the Brucella National Reference Laboratory under the requirements of the Zoonoses Order 1989 and Zoonoses Order (Northern Ireland) 1991.

5.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[17]

No cases of *Brucella melitensis* or *Brucella ovis* have ever been identified in Northern Ireland. Human cases of brucellosis that are diagnosed nowadays in NI are associated with infection contracted during travel.

5.5. Additional information[18]

[16] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[17] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and food, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

6. General evaluation: *Campylobacter*

6.1. History of the disease and/or infection in the country[19]

Human campylobacteriosis due to thermophilic Campylobacter is a major cause of food poisoning, although non-thermophilic strains (such as C. fetus) can also (rarely) cause severe zoonotic illness. The route of transmission to humans in many sporadically occurring cases remains obscure. Campylobacter are commonly found in clinically healthy animals. Poultry have long been considered as a potential source of infection. Multi-locus Sequence Typing (MLST) studies support this view, identifying poultry meat as an important source of Campylobacter infections in humans. http://cid.oxfordjournals.org/content/48/8/1072.full.pdf+html Sheppard et al., 2009; http://www.plosgenetics.org/article/fetchArticle.action?articleURI=info:doi/10.1371/journal.pgen.100020 3)

6.2. Evaluation of status, trends and relevance as a source for humans[20]

Campylobacter is commonly found in the intestinal tract of animals where it is regarded as commensal bacteria. Clinical disease is rare, and most frequently associated with abortion in ruminants. Consequently, most isolations of *Campylobacter* in animals are from ruminant abortion investigation cases (*Campylobacter* fetopathy), with *Campylobacter fetus* being the most common isolate. Ruminant abortion material is not considered a major source for human infection.

6.3. Any recent specific action in the Member State or suggested for the European Union[21]

[19] Provide the description of history of the infection, stating whether the infection is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.
[20] Provide the epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, animal).
[21] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

6.4. Additional information

The FSA has been running a UK Campylobacter Risk Management Strategy since 2014 which secured commitment from industry to reduce Campylobacter spp. contamination in raw chicken. A target was set to reduce the prevalence of the most contaminated chickens (those with more than 1000 cfu per gram chicken neck skin) to below 10% at the end of the slaughter process (equivalent to 7% at retail sale). This target was achieved in 2016. The Campylobacter strategy was then adjusted to business as usual with the top nine retailers committing to continuing to submit their raw data to the FSA (anonymously) but also agreeing to each publish their data on their own websites.

[ARCHIVED CONTENT] Latest figures reveal decline in cases of campylobacter | Food Standards Agency (nationalarchives.gov.uk)

The FSA's focus then shifted to smaller retailers with the Retail Survey exclusively sampling from small retailers; the last year of the report has now been published and can be found at https://www.food.gov.uk/research/antimicrobial-resistance/a-microbiological-survey-of-campylobacter-contamination-in-fresh-whole-uk-produced-chilled-chickens-at-retail-sale-y6. This includes data for NI.

7. Description of Monitoring/Surveillance/Control programmes system: *Campylobacter* in broiler carcasses

7.1. Monitoring/Surveillance/Control programmes system[22]

Operators of approved poultry slaughterhouses have continued to take samples from broilers in compliance with Article 4 and Annex I Chapter II of Regulation (EC) 2073/2005 for testing against the Campylobacter spp process hygiene criteria 2.1.9.

Food: Microbiological surveys of *Campylobacter* contamination in chickens at retail sale have continued as part of the Food Standards Agency's Strategic Plan to reduce *Campylobacter* contamination in whole raw chicken. To help monitor progress, a series of UK-wide surveys have been undertaken to determine the levels of campylobacter spp. on whole UK-produced, fresh chicken from non-major retailer stores in the UK. The latest survey represents year 6 of sampling, carried out from August 2019 to October 2020 https://www.food.gov.uk/research/antimicrobial-resistance/a-microbiological-survey-of-campylobacter-contamination-in-fresh-whole-uk-produced-chilled-chickens-at-retail-sale-y6.

In the Year 6 survey, a total of 1008 whole fresh raw chickens from non-major retailer stores were collected from August 2019 to October 2020. The proportion of chickens with Campylobacter spp. levels at more than 1000 cfu per g chicken skin ranged from 6.3% to 15.2% across all types of stores. No significant difference was found in the percentage of samples with counts above 1000 cfu of campylobacters per g chicken skin between samples from survey Year 5 (August 2018 to July 2019; https://www.food.gov.uk/research/foodborne-disease/a-microbiological-survey-of-campylobacter-contamination-in-fresh-whole-uk-produced-chilled-chickens-at-retail-sale-y5) and survey Year 6 (August 2019 to October 2020); the average percentage for both years was 11.8%. Overall, the percentage of fresh whole chicken on retail sale in non-major retailer stores in the UK contaminated with the highest level of more than 1000 cfu of Campylobacter spp. per gram has decreased since 2014 and has decreased further between 2017 and 2020.

[22] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

7.2. Measures in place[23]

A *Campylobacter* Risk Management Strategy has been developed to reduce levels of *Campylobacter* in chicken. The programme encompasses a range of projects targeted at different points across the food chain, from farm to fork. The Food Standards Agency (FSA) has been working in partnership with the industry and DAERA as part of the Acting on *Campylobacter* Together (ACT) campaign.

The FSA has identified the need for further research to better understand how colonisation of flocks on farms may be reduced, including determining any role of supply from breeders.

The FSA continues to include Campylobacter as part of its Foodborne Disease (FBD) Strategy and therefore it is one of the four key pathogens which requires monitoring and surveillance. Thresholds were established in 2018 as part of the FSA's population-level monitoring of FBD cases. They are used to ensure notable increases in FBD rates trigger action and were set for key foodborne pathogens at a level that would be considered outside of the expected range while taking into consideration year to year variation. A breach of thresholds would signal the need for investigation and, if necessary, action. A threshold level toolkit has been developed which sets out the agreed process on when and what action would be taken if levels rise outside of the expected range. A review of thresholds was carried out in 2024 which considered 4 key questions

1. Is the concept of having thresholds still a sensible way to monitor levels and trigger action?
2. If thresholds are retained, how do we make sure those thresholds are meaningful and valid for each pathogen?
3. Is there a benefit to setting thresholds annually as we monitor trends on reported cases of foodborne disease, rather than maintaining a static threshold that is reviewed periodically?

[23] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission and co-financed by the EU, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

4. What assurance mechanisms do we need to make sure thresholds and outputs of trend analysis are meaningful?

More detail on the review, the threshold tool kit and the overall FSA foodborne disease strategy was presented as a paper to the FSA Board earlier this year and can be found at the following link

Foodborne Disease Monitoring | Food Standards Agency

7.3. Notification system in place to the national competent authority[24]

Reporting of *Campylobacter* when isolated from human clinical diagnostic samples is mandatory.

Notification is not mandatory in food.

7.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[25]

During 2024 a total of 650 neck skin samples were taken post chilling as per the process hygiene criterion 2.1.9 in Regulation (EC) 2073/2005. There were 67 unsatisfactory results of >1,000cfu/g.

Where necessary, action plans were instigated by the food business operator to address the unsatisfactory results. These were monitored through to completion by the competent authority.

7.5. Additional information

[24] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[25] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and food, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

8. Description of Monitoring/Surveillance/Control programmes system: *Campylobacter* in animals

8.1. Monitoring/Surveillance/Control programmes system[26]

During 2024 in Northern Ireland no official monitoring took place for Campylobacter in animals. Any data that was provided was from clinical investigation.

8.2. Measures in place[27]

8.3. Notification system in place to the national competent authority[28]

8.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[29]

8.5. Additional information

[26] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[27] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission and co-financed by the EU, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

[28] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[29] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and food, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

9. General evaluation: *Echinococcus*

9.1. History of the disease and/or infection in the country[30]

Echinococcus granulosus is present in Northern Ireland. E. multilocularis has not been found in the indigenous NI animal population. NI has official disease-free status in accordance with Commission Delegated Regulation (EU) No 2018/772.

9.2. Evaluation of status, trends and relevance as a source for humans[31]

Animals: In Northern Ireland, Veterinary Service staff are situated in all meat plants and carry out post-mortem inspection of all carcases, including inspection for evidence of hydatid cysts. E. multilocularis has not been found in indigenous animals in NI. NI has official disease-free status in accordance with Commission Delegated Regulation (EU) No 2018/772.

9.3. Any recent specific action in the Member State or suggested for the European Union[32]

9.4. Additional information

[30] Provide the description of history of the disease, stating whether a disease is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

[31] Provide the epidemiological evaluation (trends and sources) over time until current situation for the different relevant animals.

[32] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

10. Description of Monitoring/Surveillance/Control programmes system: *Echinococcus multilocularis*

10.1. Monitoring/Surveillance/Control programmes system[33]

Under EU Commission Delegated Regulation (EU) no 2018/772 of 21 November 2017 surveillance of the wild definitive hosts (red foxes, *Vulpes vulpes)* is required to demonstrate disease freedom to justify continued preventive health measures to control *E. multilocularis* infection in dogs and prevent further geographical spread of the parasite to free areas within the EU. That surveillance requires the testing each year of a specified number of foxes randomly sampled from across Northern Ireland.

10.2. Measures in place[34]

NI has official *E. multilocularis* free status. A survey is carried out each year of the definitive wildlife host, the European red fox, *Vulpes vulpes*, to verify that NI remains free of *E. multilocularis*. In addition to keep NI free of *E. multilocularis* all dogs entering NI (except for those coming from other countries with official disease-free status in accordance with Commission Delegated Regulation (EU) No 2018/772) must be treated with praziquantal before entering NI. This treatment must have been given no less than 24 hours and no more

[33] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. Include the monitoring schemes/surveillance strategies for *E. multilocularis* separately in *Canidae* definitive hosts especially in foxes and raccoon dogs (by using molecular test methods on parasitic material in faeces or intestine content, or a direct parasitological test for the morphological identification of worms in the gut) and in intermediate hosts especially wildlife such as voles, musk rats and other rodents (by morphological examination at necropsy or molecular tests). Differentiation of the regions according to the status (endemic, emerging, free), if available. If programme is approved by the EC, please provide link to the specific programme in the Commission's website.

[34] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission and co-financed by the EU, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

than 120 hours (5 days) before the dog enters NI. If a dog is not treated it will be refused entry or put into quarantine.

10.3. Notification system in place to the national competent authority[35]

There is a statutory requirement to report if an animal or carcass is known or suspected to be infected by *Echinococcus multilocularis*, under the Zoonoses Order 1989 (as amended). The finding of *E. multilocularis* in the wild definitive host, the European red fox, must be notified immediately to the EU.

10.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[36]

As part of an annual, continuous monitoring programme in wild definitive hosts to demonstrate disease freedom in NI, faecal samples are collected from red foxes (*Vulpes vulpes)* and tested for the presence of *E. multilocularis*. In total in 2024, 391 were collected and tested in Northern Ireland. Of the total 391 foxes tested in NI during the year, all tested negative for *E. multilocularis*. These results are supported by previous surveys and give 95% confidence that *E. multilocularis* is not present in the NI red fox population at a prevalence of 1% or greater.

10.5. Additional information

[35] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[36] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection).

11. Description of Monitoring/Surveillance/Control programmes system: *Echinococcus granulosus sensu lato*

11.1. Monitoring/Surveillance/Control programmes system[37]

11.2. Measures in place[38]

11.3. Notification system in place to the national competent authority[39]

11.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[40]

11.5. Additional information

[37] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. Include the monitoring schemes/surveillance strategies for *E. granulosus s.l.* separately in *Canidae* definite hosts such as domestic and stray dogs (by molecular test methods on parasitic material in faeces or intestine content, or a direct parasitological test for the morphological identification of worms in the gut) and livestock intermediate hosts or more, generally ungulates, (by detection of cysts in abdomen and confirmation with morphological examination at necropsy or molecular tests). Also include monitoring policy at slaughterhouse level for *E. granulosus s.l.* (meat inspection based on national and EU legal requirements) for livestock intermediate hosts, more generally ungulates. It is extremely important to group the investigated animals per species and age category (e.g. <1 year; >1 year). Differentiation of the regions according to the status (endemic, emerging, free), if available. If programme is approved by the EC, please provide link to the specific programme in the Commission's website.

[38] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission and co-financed by the EU, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. Antiparasitic treatments in pets (dogs) and wildlife, meat inspection procedures at slaughterhouses, good management practices when handling intestines and organs of infected animals (to avoid consumption by dogs or cats), recommendations to consumers and food handlers (especially for berries and mushrooms) and effective management of stray dogs should be reported. Biosecurity measures at the farm/holding level or recommendations for zoos should be also included.

[39] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[40] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection).

12. General evaluation: *Listeria*

12.1. History of the disease and/or infection in the country[41]

Listeria monocytogenes is widely distributed in the environment, including in soil, decaying vegetation and fodder such as silage in which the bacteria can multiply. In humans the disease most commonly occurs in pregnant women, neonates, elderly people and those with a range of underlying medical conditions including cancer and diabetes. Consumption of foods contaminated with L. monocytogenes is the main route of transmission to humans. Zoonotic infection acquired directly from animals is also possible, although cases reporting animal contact are rare. In animals, listeriosis is chiefly a disease of farmed ruminants, with cattle and sheep considered the most frequently clinically infected species. Infection is opportunistic and may occur through umbilical infection in the neonatal period, or more commonly though the ingestion of soil or soil-contaminated feed, notably poor-quality silage.

Listeriosis is a rare disease in Northern Ireland. The potential link, if any, between listeriosis infection in animals and infection in humans remains unclear. In animals in Northern Ireland the majority of cases occur between January and April when animals are housed. This peak in cases is linked to the feeding of poorly fermented soil-contaminated silage.

12.2. Evaluation of status, trends and relevance as a source for humans[42]

In animals, numbers of diagnoses of listeriosis vary between years, and are influenced by submission rates but also by climatic factors which may influence silage quality or soil exposure for grazing animals.

Relevance of animal findings to human cases: It is believed that consumption of contaminated foods is the main transmission route for both people and animals. Human infection acquired directly from animals is possible, but apart from a few cases it is not clear what, if any, connection there is between human listeriosis and animal listeriosis.

12.3. Any recent specific action in the Member State or suggested for the European Union[43]

[41] Provide the description of history of the infection, stating whether the infection is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

[42] Provide the epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, animal).

[43] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and

12.4. Additional information

13. Description of Monitoring/Surveillance/Control programmes system: *Listeria* in food

13.1. Monitoring/Surveillance/Control programmes system[44]

During 2024 in Northern Ireland no official monitoring took place for Listeria in food. Any data that was provided was from clinical investigation.

13.2. Measures in place[45]

13.3. Notification system in place to the national competent authority[46]

13.4. Results of investigations and national evaluation of the situation, the trends and sources of infection

13.5. Additional information

monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

[44] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[45] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

[46] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

14. Description of Monitoring/Surveillance/Control programmes system: *Listeria* in animals

14.1. Monitoring/Surveillance/Control programmes system[47]

During 2024 in Northern Ireland no official monitoring took place for Listeria in food. Any data that was provided was from clinical investigation.

14.2. Measures in place[48]

14.3. Notification system in place to the national competent authority[49]

14.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[50]

14.5. Additional information

[47] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[48] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. For *Listeria monocytogenes* in animals: disposal of potentially infective materials such as aborted animal fetuses, birth excretions and the bodies of dead animals.

[49] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[50] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and food, and their connection to human cases (as a source of infection).

15. General evaluation: *Mycobacterium*

15.1. History of the disease and/or infection in the country[51]

Zoonotic Mycobacteria

There are several types of *Mycobacteria* which are potentially zoonotic. Most human tuberculosis cases are caused by infection with the *M. tuberculosis* which is primarily a human pathogen.

M. bovis (which is the primary causative agent of bovine tuberculosis) can also cause disease in humans. When disease does occur, it is clinically indistinguishable from disease caused by the human pathogen, *M. tuberculosis*.

Zoonotic transmission from cattle to humans can occur by aerosol transmission (via close contact with heavily infected cattle) or by ingestion of unpasteurised milk and dairy products. The incidence of human cases of *M. bovis* in NI was dramatically reduced once pasteurisation of milk became routine practice.

The history of bovine TB control in Northern Ireland

In 1949 a voluntary TB control scheme based on the use of intradermal (skin) testing was launched for cattle in Northern Ireland. This was later replaced by a compulsory eradication campaign in 1959. Initially progress was good and by the early 1980s the level of infection in cattle had been reduced to a very low level. In contrast, recent decades have seen a significant increase in disease levels in cattle. Incidence peaked in 2002 following an outbreak of Foot and Mouth disease and fluctuated in the following years. Recent years have shown a general upward trend in disease levels.

The current situation

Bovine tuberculosis is a notifiable disease in Northern Ireland and as such, all suspected or confirmed cases in any animal species must be reported to the Competent Authority. The competent authority in Northern Ireland for control of *M. bovis* in animals is the Department of Agriculture, Environment and Rural Affairs (DAERA).

[51] Provide the description of history of the disease, stating whether a disease is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

Cattle and badgers are considered as the main maintenance hosts for *M. bovis* in Northern Ireland and it is currently considered to be endemic in both. Infection can occur and has also been reported in many other species, but these are mainly regarded as "spill over" or "dead end" hosts when they do occur. Sporadic cases are reported in non-bovines in Northern Ireland including in alpacas, sheep, cats, pigs and deer.

15.2. Evaluation of status, trends and relevance as a source for humans[52]

In the late 19th century tuberculosis in humans was widespread in Northern Ireland and was a major cause of mortality. It is thought to have been responsible for approximately 1 in 5 deaths at its peak.

Throughout the 20th century huge progress was made in controlling tuberculosis in humans. There were many reasons why TB control became one of the major public health successes of recent centuries. Societal changes and improvements in housing, nutrition and living standards played an important part, as did specific controls such as the implementation of universal free BCG vaccination of school age children. This was replaced in 2005 by more targeted use in high-risk areas and individuals.

The gradual adoption of routine milk pasteurisation and the progress made in reducing disease levels in the cattle population between 1950 and 1980 contributed to the virtual elimination of zoonotic TB as a major public human health issue. Although cattle disease levels remain stubbornly high, the controls in place throughout the food production chain mean that zoonotic transmission of *M. bovis* currently poses a very low risk to human health in Northern Ireland. These controls include statutory participation in the cattle eradication programme, statutory meat inspection and restrictions on the sale of unpasteurised milk.

The current situation

Preliminary data from the Public Health Agency (PHA) shows that in 2024 there were 86 human confirmed Mycobacterium Tuberculosis Complex (MTBC) cases diagnosed in Northern Ireland. Three of these cases (3.5 %) were confirmed to be *M. bovis*.

[52] Provide the epidemiological evaluation (trends and sources) over time until current situation for the different relevant matrixes (food, animal). If relevant specify the official "disease status" (e.g. brucellosis in cattle and small ruminants) for the whole country and/or specific regions within the country.

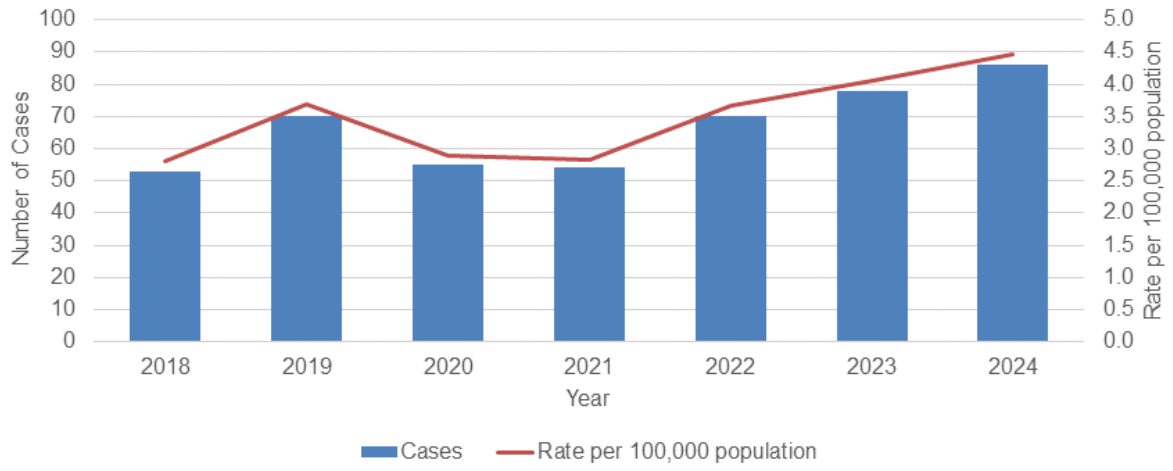
The recent trends for human cases of MTBC

Northern Ireland is a low incidence region for MTBC in humans.

It is notable however that from 2022 onwards there has now been a slight gradual upward trajectory in cases for 3 consecutive years. Case numbers since 2018 are shown in the table below:

Year	Cases	Rate per 100,000 population
2018	53	2.8
2019	70	3.7
2020	55	2.9
2021	54	2.8
2022	70	3.7
2023	78	4.1
*2024	86	4.5

Since the annual case numbers are small, trends are generally best evaluated using a three-year moving average as shown below:



Again, this data indicates a slight ongoing increase in human cases in recent years.

15.3. Any recent specific action in the Member State or suggested for the European Union[53]

Not applicable

15.4. Additional information

DAERA liaises with the PHA when there is a potential for zoonotic transmission of disease. (For example, if raw unpasteurised milk is being sold from a farm or if a household pet is infected with *M. bovis*.)

When a TB outbreak occurs on a holding the herd keeper is provided with public health information aimed at reducing the risk of zoonotic transmission.

[53] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

16. Description of Monitoring/Surveillance/Control programmes system: *Mycobacterium* in Bovine animals

16.1. Monitoring/Surveillance/Control programmes system[54]

Tuberculosis infection is a notifiable disease in Northern Ireland (NI) and as such, all suspected or confirmed case in any species must be reported to DAERA. DAERA will liaise with the Public Health Agency (PHA) if there is likely to be a significant risk of spread between animals and humans.

There is a comprehensive programme of MTBC monitoring and surveillance in cattle. This is backed up by additional controls on meat and milk.
The key points are summarised below.

TB Monitoring, Surveillance and Control in Cattle

All cattle holdings in Northern Ireland must be registered with DAERA and there is full traceability at herd and individual animal level via a computerised database. This system underpins the whole TB Programme and facilitates application and enforcement of movement restrictions and tracing to and from infected holdings.

Test and slaughter.

The cornerstone of the bovine TB eradication programme in Northern Ireland is a statutory system of test and slaughter - no vaccination is currently available for use in cattle.

[54] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission's website. For tuberculosis in bovine animals and in farmed deer, it is important to report the sample type (because not included in the data model) which could be abnormal lymph nodes and parenchymatous organs (e.g. lungs, liver and spleen), which are typically sampled when there are pathological lesions. If there are no lesions, liver and the following lymph nodes are usually collected: retropharyngeal, bronchial, mediastinal, supramammary, mandibular and some mesenteric. For the gamma-interferon test, blood samples are collected. For Member States with non-disease-free status from infection with MTBC a description of the eradication or surveillance system is to be provided this information should be provided

Skin testing

The testing programme is centred around the use of the CITT (Comparative Intradermal Tuberculin Test) on all herds at least annually. Testing frequency is increased in higher risk herds; for example holdings deemed to be at risk due to proximity to a confirmed outbreak are placed on a programme of 6 monthly testing.

Skin testing is carried out mainly by Approved Veterinary Surgeons (AVSs). AVSs are private veterinary surgeons who supply testing services to DAERA under the terms of a tightly regulated Public Services Contract. Some testing is also carried out by vets directly employed by DAERA.

IFNG Testing

The Interferon Gamma (IFNG) blood test is also used in some circumstances, either in parallel with the CITT or as a standalone test in selected confirmed breakdown herds. The aim is to increase the detection of infected animals, particularly those in the earlier stages of infection. The standalone test is used to allow more rapid decision making in the case of explosive outbreaks, particularly when full or partial depopulation may warrant consideration

The use of the IFNG test has to date been voluntary in Northern Ireland. Although the IFNG test itself requires the agreement of the herd keeper, removal of any positive animals is mandatory irrespective of CITT results. All blood sampling for IFNG testing is carried out by DAERA staff.

Meat Inspection

All cattle slaughtered for human consumption undergo routine meat inspection. This inspection is carried out by DAERA employed Meat Inspectors under the immediate supervision of a DAERA employed Official Veterinarian. This slaughterhouse surveillance provides an important additional means of detection of infection. When suspect lesions are detected in non-reactor animal samples are taken for laboratory confirmation and tracing is carried out. The herd of origin is restricted pending the outcome of further testing.

When suspect MTBC lesions are found at routine slaughter, samples are taken for laboratory analysis. If either histology or culture yields a positive result for *M. bovis* the case is regarded as confirmed.

Laboratory Testing

All laboratory testing services (histology, culture, IFNG testing and strain typing) are carried out by the Agri-Food and Biosciences Institute (AFBI). PCR testing is not used in NI as part of the TB Programme but may be in the future.

Case definitions

When one or more animals from a herd are classified as a reactor at a test or found to be lesioned at routine slaughter then the herd is declared a "breakdown" herd and movement restrictions are imposed. An animal is considered a "confirmed" TB case if it has had either:

- a positive test and either has TB like lesions at post-mortem or are positive on subsequent laboratory testing.
- Visible lesions at routine slaughter and is positive on subsequent laboratory testing.

- If more than one skin reactor is found in a herd the herd is automatically treated as a confirmed breakdown.

Case management by DAERA vets

There is a comprehensive system of breakdown management for all breakdown herds. All outbreaks are managed by a DAERA employed veterinary surgeon. The aim of this breakdown management is to eradicate infection, prevent further spread and identify possible sources. Detailed Public Health Advice is also provided to herd keepers.

The key elements of control measures include:

- Officially Tuberculosis Free (OTF) status is suspended or withdrawn as applicable and movement restrictions are imposed at herd level until the requirements for the restoration of OTF status are met.
- Isolation notices are served requiring the immediate isolation of suspect cases.
- Animals that are classified as "reactors" or "negative in contacts" are valued and removed from the farm within a target of 15 working days.
- Backward and forward tracing is carried out from all confirmed breakdown herds to identify other herds which may be at risk and subject to veterinary risk assessment these herds may be subjected to extra testing ± movement restrictions.

- An epidemiological investigation is carried out to pinpoint the possible/likely source of infection.
- Additional short interval skin testing is carried out until the herd fulfils the criteria for OTF restoration. The IFNG blood test is also used in certain pre-defined circumstances in order to improve the sensitivity of detection.
- Prior to restoration of herd status to OTF, compulsory cleansing and disinfection must be carried out.
- Detailed biosecurity advice is given to keeper including guidance in relation to the handling and disposal of slurry and farmyard manure.
- Partial or whole herd depopulations are occasionally actioned subject to comprehensive veterinary risk assessment.

Controls against food borne spread.

Controls for milk and dairy products

Strict controls are in place to minimise the risk of MTBC infection of humans from ingestion via milk and dairy products. All holdings producing milk for human consumption must be registered with DAERA as milk producers. Almost all milk produced in NI is collected directly from farms and then pasteurised at an approved processing plant. The pasteurising process is deemed adequate to eliminate any risk from *M. bovis*. In addition, producers are not permitted to include milk from TB reactors in the bulk tank.

A very small number of milk producers are also registered to sell unpasteurised ("raw") milk for human consumption directly to the public. If such a herd becomes restricted for TB, sale of raw milk from this holding must cease immediately.

Controls for meat

All bovine carcasses destined for human consumption undergo a prescribed meat inspection process undertaken by DAERA employed meat inspectors acting under the supervision of a DAERA employed Official Veterinarian. This meat inspection process also provides an important means of surveillance.

16.2. Measures in place[55]

In cattle

There is no vaccine currently available or licensed for use in cattle against MTBC in Northern Ireland. The TB Programme is currently based on "test and slaughter" with a comprehensive system of movement restrictions and tracing. All confirmed outbreaks are subject to veterinary epidemiological investigation.

A TB Eradication Plan (EP) was approved by the EU Commission for Northern Ireland in 2022 which has a span of 6 years until the next approval is required not withstanding some 6-monthly and annual reporting which must be carried out.

The current NI Eradication Programme can be viewed here:

NI Eradication Plan

Policy Review

During 2024 Northern Ireland's Chief Veterinary Officer carried out a comprehensive review of bovine tuberculosis in Northern Ireland. This review was published on 28th November 2024 and can be viewed here:

Chief Veterinary Officer Review of Bovine Tuberculosis in Northern Ireland November 2024 | Department of Agriculture, Environment and Rural Affairs

16.3. Notification system in place to the national competent authority

Yes. The Diseases of Animals Order (1981) (as amended) and the Tuberculosis Control Order (NI) 1999 (as amended) impose a statutory requirement to notify the competent authority (DAERA) of suspect cases of bovine TB.

[55] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. Biosecurity measures at the farm/holding level or recommendations for zoos should be also included.

16.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[56]

Incidence statistics

The headline figures used in the TB Programme are "Annual Herd Incidence" and "Annual Animal Incidence." The Annual Herd Incidence is defined as the number of new reactor herds during the last 12 months as a proportion of cattle herds which have presented cattle for a TB skin test during the same time period. Annual animal incidence is defined as the number of reactor animals during the last 12 months as a proportion of cattle which have been presented for a skin test during the same period

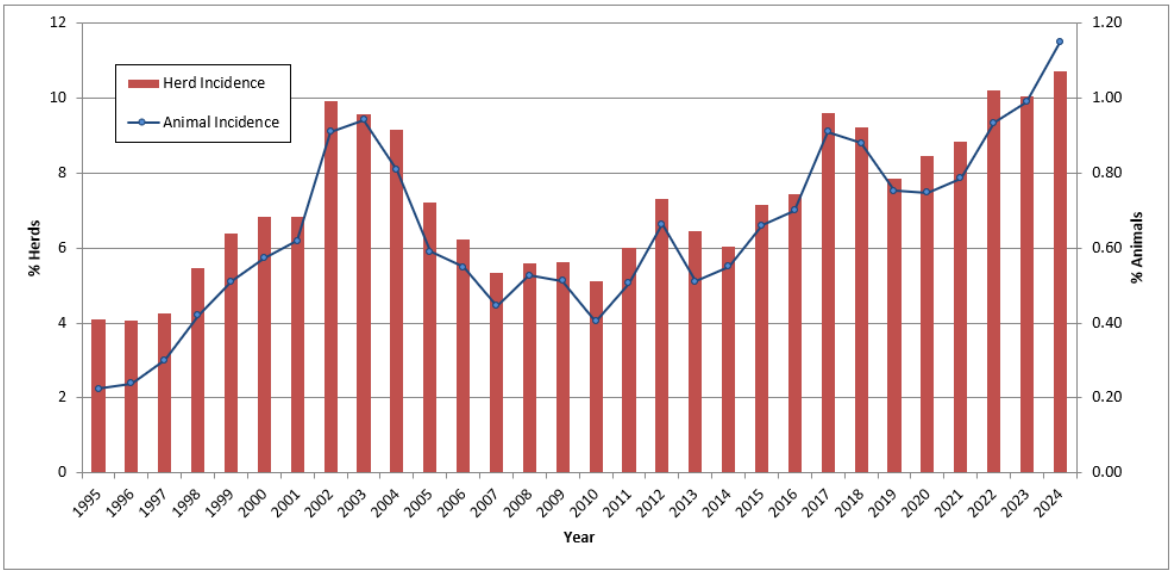
At the end of 2024 the annual herd incidence in Northern Ireland was 10.70% and the animal incidence was 1.149%.

Longer term trends

Herd incidence fluctuates year on year. After a peak in 2017 both herd and animal incidence decreased during 2018 and 2019 before increasing again during 2020, 2021 and 2022. There was a small decrease in 2023 but it has increased again in 2024. (See Graph below)

Graph summarising long term trends in herd and animal incidence

[56] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection).



Other summary statistics for 2024

- A total of 3,445,844 individual CITTs were carried out in NI with 1,785,562cattle tested from 21,617herds.
- 20,510 animals were identified as CITT reactors.
- 2,911 animals were found to have suspect lesions at "routine slaughter" (LRS) detected in NI up to the end of the 3rd quarter of 2024 (these figures exclude animals imported into NI for direct slaughter). This equates to approx. 8.13 LRS animals per 1,000 animals slaughtered. The laboratory confirmation rate of these LRS animals was 71.1% - 5.78 confirmed LRS animals p er 1,000 animals slaughtered.
- During 2024, 12308 IFNG tests were carried out in **parallel** with a skin test of which 962 CITT negative animals yielded a positive IFNG result. These 962 were removed on the basis of the positive IFNG result.
- Of the animals removed solely on the basis of positive IFNG results 16.00 % (156 animals) had visible TB-like lesions detected at slaughter.
- In some cases "standalone" IFNG testing was also conducted (i.e. no concurrent skin testing). in order to detect early infection with bTB. Where the test was carried out after an initial CITT, a period of at least 14 days was allowed before conducting the IFNG test.
- In 2024 there were 4679 animals tested using the **decoupled / standalone** IFNG method of which 10% (470 animals) were detected as IFNG positive, with 21% (97 animals) of these positive cases showing lesions at slaughter.

- In total this meant during 2024, 16,987 animals were tested using the IFNG test, detecting a total of 1,432 positive animals which were not positive to a CITT or did not have a parallel CITT, all of which were removed to slaughter.

Further information

A more detailed summary of the Northern Ireland disease trends and statistics for 2024 can be found online via the following link:

Tuberculosis disease statistics in Northern Ireland 2024 | Department of Agriculture, Environment and Rural Affairs

Animals lesioned at routine slaughter

Animals found to be lesioned at routine slaughter are referred to as LRS cases.

Excluding animals imported into Northern Ireland for direct slaughter, 2,911 LRS animals were detected in NI up to the end of the third quarter of 2024. Of these 2,071 were subsequently confirmed as *M. bovis* by laboratory testing. This equates to a 71.1% confirmation rate or a confirmed LRS occurrence of 5.78 cases per 1,000 animals slaughtered. This is equivalent to approximately 8.13 LRS animals per 1,000 cattle routinely slaughtered in NI. Equivalent LRS figures for 2023 (the whole year) were 3,070 (of which 2,051 were confirmed.

Animals as a source of infection for humans

See 1.2 for information on human cases.

Most *M. bovis* cases in humans are assumed to be related to transmission from animals either directly or indirectly (mainly via consumption of unpasteurised milk). However, since the number of cases of M. bovis in humans is relatively small it is difficult to identify definite trends. Medical confidentiality rules also limit the information available to DAERA and hence the ability to draw definite conclusions in relation to source of infection.

16.5. Additional information

17. Description of Monitoring/Surveillance/Control programmes system: *Mycobacterium* in other animals than Bovine animals

17.1. Monitoring/Surveillance/Control programmes system[57]

Cases in non-bovines are generally identified as a result of one of the following:

(a) Reporting of clinical suspects from a private veterinarian

(b) Diagnostic post-mortems carried out at AFBI

(c) LRS cases in non-bovine species slaughtered for human consumption. LRS cases in non-bovines in slaughterhouses are sampled for laboratory confirmation in the same manner as bovine LRS cases.

M. bovis in non-bovine livestock

MTBC is reported sporadically in NI in various non-bovine livestock species including alpacas, deer, sheep, goats and pigs.

Currently there is no legislation in place in NI to allow DAERA to impose restrictions and compulsory testing on non-bovines unless there is also a bovine herd on the holding. When cases are reported to DAERA advice is given to the holding on disease control and public health.

When there are bovine animals present on the same holding, DAERA has the power to enforce testing on both the bovine and non-bovine animals.

M. bovis in wildlife

There is a significant reservoir of infection in the wild badger population.

MTBC in domestic cats

In 2024 there were 2 *M. bovis* suspect cases in pet cats in NI which were reported to DAERA. DAERA have no legal powers to enforce euthanasia or testing of domestic pets so pet owners may elect not to carry out confirmatory testing or post-mortem so the diagnosis often remains unconfirmed.

It is unclear whether the apparent increase in reported suspect cases in cats in recent years is due to a genuine increase in infection levels or to an increase in awareness amongst private vets.

[57] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission's website.

LRS cases

6 suspect LRS cases were reported in pigs in 2024. 2 of the 6 suspects were in animals imported into NI for direct slaughter. All were from commercial pig farms. Laboratory testing was negative in all 6 cases.

Passive surveillance in badgers

M. bovis is widely acknowledged to be endemic in badgers in Northern Ireland. Since 1998 there has been a passive surveillance programme in place for badgers killed in road traffic accidents (RTA). When roadkill badgers are reported, DAERA staff collect the carcase, and it is subjected to detailed post-mortem and laboratory testing at the Agri-Food and Biosciences Institute (AFBI). If *M. bovis* is confirmed, then "strain typing" is carried out and this provides a useful comparison with 'strain types' in cattle in the area. Results of testing are reported to DAERA.

The results of the RTC survey provide an estimated annual *M. bovis* prevalence in badgers in Northern Ireland since 1988.

Routine meat inspection

Although the vast majority of LRS cases are in cattle occasional cases are reported in other species (mainly deer, sheep and pigs).

17.2. Measures in place[58]

No badger intervention (culling or vaccination) was carried out in Northern Ireland in 2024.

[58] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. The control programmes may be national or regional, and they may be approved nationally or by the Commission, based on Regulation (EU) 2021/690. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. Biosecurity measures at the farm/holding level or recommendations for zoos should be also included.

17.3. Notification system in place to the national competent authority[59]

Yes

17.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[60]

In 2024 420 roadkill badgers were collected and suitable for testing. Of these 328 were negative on culture and 86 were positive with results still outstanding for 6. i.e approximately 20.5 % of badgers tested were positive in 2024.

There has been some fluctuation from year to year with confirmation levels remaining consistently between 13% and 22%.

TB in cats

- When a suspect is reported DAERA may offer to carry out a postmortem examination to confirm the diagnosis, but some owners refuse or the pet has already been euthanised. In 2023 two suspect cases were reported by private vets.
- The first case was in a domestic pet cat which had a scleral growth surgically removed and sent for histology and PCR testing. The PCR result was positive, but the cat's clinical condition deteriorated rapidly, and the owner opted for euthanasia. Post-mortem samples taken from the lungs, lymph nodes and the eye which had the lesion removed, yielded positive culture results for *M bovis*.
- The second case presented to a veterinary practice with respiratory symptoms and pyrexia. When it failed to respond to antibiotics further investigations were carried out including a chest X-ray and a bronchoalveolar lavage (BAL) sample. The chest X-ray was highly suggestive of TB and the BAL sample was ZN positive on histology. The owner opted for euthanasia but declined a post-mortem so a definitive diagnosis was not possible.
- Neither of these cats were known to have been fed raw meat or raw milk so the source of infection remains unclear.

TB in deer

There is one commercial farmed deer abattoir in NI which operates seasonally. In 2024 no LRS cases were reported.

[59] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[60] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection).

There was one wild deer pluck submitted to AFBI by a commercial deer stalker who found suspicious lesions. *M. bovis* was confirmed and was the same strain type seen in local cattle herds.

TB in other species

In 2024 a local strain of *M.bovis* was confirmed in a roadkill otter that was collected and taken to the lab. The source of infection is unknown but is likely to be related to access to a contaminated carcase.

17.5. Additional information

19. General evaluation: *Salmonella*

19.1. History of the disease and/or infection in the country[61]

Most human non-typhoidal salmonellosis in Northern Ireland is acquired via the foodborne route. However, it can be difficult to trace the definite original source for sporadic cases. *Salmonella* Typhi and *S*. Paratyphi (typhoidal *Salmonella*) are adapted to humans and are thus not considered to be zoonotic.

The majority of *Salmonella* isolations in farm livestock in Northern Ireland are detected as a result of testing diagnostic samples from clinically diseased cattle, or as a result of statutory surveillance under legislative programmes to control salmonella in flocks of domestic fowl and turkeys. The poultry *Salmonella* National Control Programmes (NCPs) are required under EU regulation. All NCPs focus on reducing the prevalence of the most important serovars of *Salmonella* that can affect human health and, as such, specific reduction targets are set for *S.* Enteritidis and *S.* Typhimurium (including monophasic strains). In the NCP for breeding chicken flocks, *S.* Hadar, *S.* Infantis and *S.* Virchow are also included in the reduction target. *Salmonella* NCPs have been implemented in the breeding chicken, laying chicken, broiler chicken and turkey breeding and turkey fattening industry sectors.

For poultry populations (chickens and turkeys) subject to *Salmonella* NCPs, results are reported as the number of positive flocks detected under the programmes. Trends in the number of *Salmonella* reports in animal species not subject to a NCP also need to be treated with caution in view of the inherent biases associated with the data, e.g. the level of diagnostic and surveillance testing carried out.

19.2. Evaluation of status, trends and relevance as a source for humans[62]

As would normally be expected *S*. Typhimurium and *S*. Enteritidis remain the most prevalent serovars in Northern Ireland in 2024; however, a large proportion of the cases is made up of a variety of other serovars although in much small numbers for each serovar. A substantial number were also only identified through PCR testing and could not be cultured as well as some delays in reporting of serovar information. Of those that were typed (70), 20 (29%) were *S*. Typhimurium, 20 (29%) S. enteritidis, 6 (9%) *S*. Mikawasima and 3 (4%) were *S*. Kottbus; the remaining 21 cases were split between 17 other serovars. Similar to last year

[61] Provide the description of history of the infection, stating whether the infection is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.
[62] Provide the epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, animal).

overall *Salmonella* numbers have increased and are higher than those experienced prior to the pandemic (200 cases in 2024).

Reporting of *Salmonella* spp. in people shows a consistent seasonal pattern with a distinct peak of infection observed in the third quarter of the year, although this can vary based on the serovar.

19.3. Any recent specific action in the Member State or suggested for the European Union[63]

19.4. Additional information

The majority of incidents reported are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. Therefore, the sample submission rate and the number of *Salmonella* incidents recorded on an annual basis is subject to external influencing factors which can impact on observed trends (such as clinical presentation of disease, economic influences, awareness of a disease etc).

Units tested are not known because the laboratories do not report negative results unless as part of an official control programme or survey.

[63] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

20. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* on carcases

20.1. Monitoring/Surveillance/Control programmes system[64]

Microbiological sampling is carried out in food businesses in compliance with Regulation (EC) 2073/2005 on the micro criteria of foodstuffs. Food businesses collect samples according to frequencies laid down in Annex 1 of Regulation (EC) 2073/2005. Samples are analysed in accredited laboratories and results are acted upon by food business operators according to procedures documented in a food safety management system agreed with the Competent Authority. Food safety management systems are verified and audited by the Competent Authority at a risk-based frequency.

Returns from food authorities on official food enforcement activities in line with Regulation (EU) No. 2017/625 on official controls performed to ensure the verification of compliance with feed and food law, and animal health and animal welfare rules, are collated.
The Competent Authority verifies the correct implementation by food business operators of points 2.1.3, 2.1.4 and 2.1.5 of Chapter 2 of Annex I of Regulation (EC) No 2073/2005 by collecting all information on the total number and the number of *Salmonella* – positive samples taken by food business operators. This verifies the correct implementation by food business operators of the process hygiene criterion for *Salmonella* on carcases of pigs, cattle and sheep after dressing but before chilling, and on carcases of broilers and turkeys after chilling in compliance with Article 35 of Regulation (EU) 2019/627.

20.2. Measures in place[65]

The measures in place for the sampling of carcases are documented in Section 3 of Chapter 4.3 of the Northern Ireland Manual for Official Controls which can be found at the link below

[64] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[65] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme

NI Manual for Official Controls - Verification of Microbiological Criteria

Section 3 describes the processes and procedures to be followed by operators of approved slaughterhouses when sampling carcases of domestic ungulates and poultry for *Salmonella* spp. under Regulation (EC) 2073/2005 and the competent authority when verifying sampling under Regulation (EU) 2017/625.

20.3. Notification system in place to the national competent authority[66]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs.

20.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[67]

Detections of *Salmonella* on carcases were low in 2024. Three isolations were reported on pig carcases and one isolation on a broiler carcase. There were fewer isolations on pig carcases compared to the last 2 years (20 in 2023; 10 in 2022).

20.5. Additional information

is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

[66] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[67] Provide the results for minimum five years. Evaluate the significance of positive findings in food, and their connection to human cases (as a source of infection).

21. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in food

21.1. Monitoring/Surveillance/Control programmes system[68]

Microbiological food surveillance programmes are undertaken in Northern Ireland. The priorities of these surveys are closely linked to a strategy to reduce the level of foodborne disease. Surveys are carried out regularly on a variety of foods and processes to gather data on the possible effected of processing changes on pathogens and to monitor high-risk foods linked to human cases/outbreaks and the emergence of new pathogens.
Data is collected from food authorities on official food enforcement activities in line with Regulation (EU) No. 2017/652 on official controls performed to ensure the verification of compliance with feed and food law, and animal health and animal welfare rules.

21.2. Measures in place[69]

Food safety criteria have been set for fresh poultry meat, minced meat, meat preparations, meat products, mechanically separated meat, gelatine and collagen and ready-to-eat foods.

Demonstration of compliance with food safety criteria for meat and processed meat is required as follows:

Absence of *Salmonella* spp. in:

- minced meat and meat preparations intended to be eaten raw
- minced meat and meat preparations intended to be eaten cooked, mechanically separated meat (MSM) meat products intended to be eaten raw, meat products made from poultry meat intended to be eaten cooked, fresh poultry meat (this is applicable

[68] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[69] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

only if *Salmonella* Typhimurium or *Salmonella* Enteritidis are identified) and gelatine and collagen.

Sample size and testing frequency are stated for the different commodities as illustrated via link below:

NI Manual for Official Controls - Verification of Microbiological Criteria

21.3. Notification system in place to the national competent authority[70]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs.

21.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[71]

Salmonella data in food is not included in this report as units tested are not known because laboratories do not report negative results unless as part of an official control programme or survey.

21.5. Additional information

[70] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[71] Provide the results for minimum five years. Evaluate the significance of positive findings in food, and their connection to human cases (as a source of infection).

22. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in breeding flocks of *Gallus gallus*

22.1. Monitoring/Surveillance/Control programmes system[72]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EC) No. 200/2010) and the Northern Ireland *Salmonella* National Control Programme (NCP) for breeding hens (*Gallus gallus*).

All consignments of day-old chicks are sampled on arrival at the holding. According to the requirements of the *Salmonella* NCP, mandatory sampling is required on the day of arrival – samples must be taken from each flock within 72 hours of hatching, comprising of at least the following from each hatchery supplying the chicks:

- Hatcher tray liners or chick box liners: one liner for each 500 chicks delivered, up to a maximum of 10 liners.
- All chicks dead on arrival, up to a maximum of 60.

Operator voluntary monitoring may also be undertaken and can include hatchery debris, dust, fluff, meconium samples etc.

The rearing flocks are sampled according to the requirements of the *Salmonella* NCP. Mandatory sampling is required at 4 weeks old and then 2 weeks before moving to the laying phase or laying unit as follows:

- A minimum of 2 pairs of boot swabs, or
- A composite faeces sample made up of at least 60 samples each of which weighs not less than 1 gram and each of which is taken from a site selected at random to represent the flock from which it is take.

Other operator voluntary monitoring can include rodent droppings, dust samples, swabs taken from empty houses, transport vehicles etc.

[72] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. For *Salmonella* control programmes, should be described whether the methods of sampling were in accordance with the Annexes of Commission Regulations (EU) No 200/2010, No 517/2011, No 200/2012 or No 1190/2012.

Breeding flocks in their production period are sampled according to the requirements of the *Salmonella* NCP. Mandatory sampling is required every 2 to 3 weeks during the laying/ production period. The approach depends on how the flock are kept.

For floor-reared birds:

- A minimum of 5 pairs of boot swabs, or
- One pair of boot swabs and one dust sample

For cage-kept birds:

- Two composite faeces samples of 150g each, or

One composite faeces sample and one dust sample

Other operator voluntary monitoring can include hatcher debris, fluff, additional boot swabs/faeces samples, dust samples, rodent droppings, swabs taken from empty houses, transport vehicles etc. Additional voluntary operator samples are usually taken as part of hatchery hygiene monitoring programmes.

In addition to the sampling above, Official Control Samples are collected from each adult breeding flock on two occasions which are sufficiently distant in time from each other during the production cycle (usually within 4 weeks of moving to the laying accommodation and again within the last 8 weeks of production). These replace the operator samples due at these times.

Case definition: Culture and isolation of *Salmonella* (field strain) from taken from the flock or directly associated with its environment. Reports of *Salmonella* isolates under the relevant legislation are classed as positive. A flock is counted as positive once only during the year, regardless of the number of tests carried out/ isolates obtained. 'Flock' is defined as poultry of the same health status kept on the same holding and in the same enclosure and constituting a single epidemiological unit and, in the case of housed poultry, includes all birds sharing the same airspace. Testing is done in accordance with ISO 6579-1: 2017 - Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of *Salmonella* -- Part 1: Detection of *Salmonella spp*. (MRSV method for primary production samples).

22.2. Measures in place[73]

Regulation (EC) No. 2160/2003 lays down harmonised rules for the monitoring and control of *Salmonella* in breeding flocks of domestic fowl. The legislation sets out enhanced monitoring and controls for *Salmonella* which have been implemented in the Northern Ireland *Salmonella* National Control Programme (NCP) for breeding chicken flocks. The requirements of the Programme are enforced through The Control of *Salmonella* in Poultry Scheme Order (Northern Ireland) 2008 in order to meet the target for reduction in *Salmonella* prevalence set out in EU legislation. Regulation (EC) No. 200/2010 sets a target for the breeding flock sector to ensure that no more than 1% of adult breeding flocks with more than 250 birds remain positive for the regulated *Salmonella* serovars annually. The EU target for breeding flocks is based on the 5 serovars considered of greatest public health significance at the time of drafting of the legislation (the 5 most frequent serovars in human cases): *S*. Enteritidis, *S*. Typhimurium, *S*. Virchow, *S*. Hadar and *S*. Infantis. Regulation (EU) No. 517/2011 amends Regulation (EC) No. 200/2010 to include the monophasic *Salmonella* Typhimurium variants S. 1,4,[5],12:i:- as regulated/ target *Salmonella* ssp. within the requirements of the *Salmonella* National Control Programmes. Any breeding flock found to be infected with a regulated *Salmonella* serovar according to the protocol outlined above is placed under official control and the requirements of Regulation (EC) No. 2160/2003 are implemented. Regulation (EC) No 200/2010 allows for an extension in the frequency of operator sampling at the holding from every two weeks to every three weeks, at the discretion of the Competent Authority. A reduction in the number of routine official samples required in each flock from three to two per year is also allowed. This revised testing protocol is applicable to Member States that have met the *Salmonella* reduction target as specified in the legislation for at least two consecutive calendar years. As the Northern Ireland breeding chicken sector again achieved the reduction target for 2023 and 2024, this extended testing interval (at the discretion of the Competent Authority), and the reduced official sampling frequency have been applied in Northern Ireland

[73] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included. It is of particular interest whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

in 2024. However, some breeding chicken companies have chosen to still sample at a two-weekly frequency.

Any breeding flock found to be infected with *S*. Typhimurium or *S*. Enteritidis is compulsorily slaughtered with compensation. If *Salmonella* Enteritidis or *Salmonella* Typhimurium (including monophasic strains) is suspected in a breeding flock, the flock is placed under official control. An investigation is carried out on all the flocks on the site. Following compulsory slaughter of the positive flock(s), the flock(s) remains under official control until cleaning and disinfection has been carried out and shown to be satisfactory by microbiological culture of samples taken from the empty house. Eggs from the positive flock are removed from the hatchery and destroyed. Eggs may be used for human consumption if they are treated in a manner that guarantees elimination of *S*. Typhimurium and *S*. Enteritidis. In the case of detection of *S*. Hadar, *S*. Infantis or *S*. Virchow, a control plan for eradication of infection is put in place, in collaboration with government experts on *Salmonella* control and the operator's private veterinary surgeon. Public health authorities are advised of the isolation of *Salmonella*. Visits may be made to the farm by government officials to carry out an epidemiological investigation and provide advice to the food business operator on the control of *Salmonella* if the *Salmonella* isolated is considered to be of public health significance.

According to Commission Regulation (EC) No. 1177/2006, the administration of antimicrobials to any bird of the species *Gallus gallus* as a specific method to control *Salmonella* is prohibited.

There are no restrictions on the use of *Salmonella* vaccines which have a marketing authorisation. Vaccine is not used in the layer breeder sector but may occasionally be used in the broiler breeder sector (parental level.) Codes of Practice for the Control of *Salmonella* in poultry flocks, for rodent control on poultry farms and for the production, handling and transport of feed have been published in collaboration with the industry.

22.3. Notification system in place to the national competent authority[74]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-

[74] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

approved private laboratories testing under the *Salmonella* legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

The main provisions of the Zoonoses Order are:

- A requirement to report to a veterinary inspector of the Department of Agriculture, Environment and Rural Affairs the results of tests which identify the presence of a *Salmonella* from an animal or bird or its surroundings, or from any carcase, product or feeding stuff. A culture must be provided to the official laboratory.
- Samples (including live birds) may be taken for diagnosis.
- Movement restrictions and isolation requirements may be imposed.
- Compulsory cleansing and disinfection of premises and vehicles.

The main provisions of the Control of *Salmonella* in Poultry Order relevant to the breeding chicken control programme are:

- Owners of poultry breeding flocks (of more than 250 birds) must be registered within three months of the establishment of the holding. Information supplied should include the name and address of the holding, the number (and species) of breeding flocks on the holding, the number of poultry in each breeding flock, their status in the breeding pyramid (e.g. Parent, Grandparent etc.) and whether layer breeders or meat (broiler) breeders.
- Flock owners are required to record the movements of birds, chicks or eggs onto and off the premises, including dates of movements, numbers of poultry, chicks or eggs moved, their ages, building/ flock identity and the addresses of source or destination premises. This information must be made available for inspection on request by a government authorised official. Owners must also inform officials with two weeks' notice of the expected date of movements to the laying phase or laying unit and the date on which the flock is expected to reach the end of the production cycle. This is done to facilitate the collection of official samples.

The owner/ operator is required to maintain records of the dates of sampling, type of samples collected, the identity of building, flock or holding sampled and the age of each flock sampled. Owners should also keep a record of the test result and name of laboratory used.

22.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[75]

One isolation of *S*. Mbandaka and one isolation of *S*. Ohio were detected in breeding chicken flocks in 2024. No isolations of regulated *Salmonella* were isolated from breeding chicken flocks in Northern Ireland in 2024. Therefore, Northern Ireland continued to achieve the breeding chicken target as set in EU Regulation.

22.5. Additional information

The majority of *Salmonella* incidents reported in most animal and bird species in Northern Ireland are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. However, the *Salmonella* National Control Programmes (NCPs) apply to *Gallus gallus* and turkeys. In these species the vast majority of isolations are made as a result of NCP testing.

[75] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination. It is important to analyse results from flocks at various production levels, as well as the corresponding serovar distributions. Additionally, assessing the impact of the control programmes on the prevalence and number of human cases is highly relevant.

23. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in laying hen flocks of *Gallus gallus*

23.1. Monitoring/Surveillance/Control programmes system[76]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EC) No. 517/2011) and in the Northern Ireland *Salmonella* National Control Programme (NCP) for laying hens (*Gallus gallus*).

All consignments of day-old chicks are sampled on arrival. This sample is taken in accord with the requirements of the *Salmonella* commercial laying hen NCP. Mandatory sampling is required on the day of arrival – samples must be taken from each flock within 72 hours of hatching, comprising of at least the following from each hatchery supplying the chicks:

- Hatcher tray liners or chick box liners: one liner for each 500 chicks delivered, up to a maximum of 10 liners.
- All chicks' dead-on arrival, up to a maximum of 60.

Operator voluntary monitoring can include hatchery debris, dust, fluff, meconium samples etc.

Rearing period samples are taken two weeks before moving to laying phase/ laying unit. This sample is taken in accord with the requirements of the *Salmonella* commercial laying hen NCP. Mandatory sampling is required 2 weeks before moving to the laying phase or laying unit as follows:

- A minimum of 2 pairs of boot swabs, or
- A composite faeces sample made up of at least 60 samples each of which weighs not less than 1 gram and each of which is taken from a site selected at random to represent the flock from which it is take.

[76] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. For *Salmonella* control programmes, should be described whether the methods of sampling were in accordance with the Annexes of Commission Regulations (EU) No 200/2010, No 517/2011, No 200/2012 or No 1190/2012.

Other operator voluntary monitoring can include rodent droppings, dust samples, swabs taken from empty houses, transport vehicles etc.

Laying flocks are sampled between 22-26 weeks of age, and then every 15 weeks during the production period. This sample is taken in accordance with the requirements of the *Salmonella* commercial laying hen NCP. Mandatory sampling is required, but sampling approach depends on how the birds are kept as follows:

For barn-kept and free-range flocks:

- A minimum of 2 pairs of boot swabs, or
- One pair of boot swabs and one or more hand-held faecal swabs (when kept in a multi-tier system

For cage-kept birds:

- Two composite pooled faeces (each of 150g) for each house with scrapers or belt cleaners, or
- One or more fabric swabs for houses without scrapers or belt cleaners

Other operator voluntary monitoring can include, additional boot swabs/ faeces samples, dust samples, rodent droppings, swabs taken from empty houses, transport vehicles etc.

In addition to the sampling above, Official Control Samples are collected annually for one flock on all holdings with more than 1,000 birds.

Case definition: Culture and isolation of *Salmonella* (field strain) from samples taken from the flock or directly associated with its environment. Reports of *Salmonella* isolates listed under the relevant legislation are classed as positive. A flock is counted as positive once only during the year, regardless of the number of tests carried out/ isolates obtained. 'Flock' is defined as poultry of the same health status kept on the same holding and in the same enclosure and constituting a single epidemiological unit and, in the case of housed poultry, includes all birds sharing the same airspace.

Bacteriological method: ISO 6579-1:2017 – Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of *Salmonella* – Part 1: Detection of *Salmonella* spp. (MRSV method for primary production samples.)

23.2. Measures in place[77]

Regulation (EC) No. 2160/2003 lays down harmonised rules for the monitoring and control of *Salmonella* in laying flocks of domestic fowl. The legislation sets out enhanced monitoring and controls for *Salmonella* which have been implemented in Northern Ireland *Salmonella* National Control Programme (NCP) for laying chicken flocks. The requirements of the Programme are enforced through the Control of *Salmonella* in Poultry Scheme Order (Northern Ireland) 2008 in order to meet the target for reduction in *Salmonella* prevalence set out in EU legislation. Regulation (EC) No. 517/2011 sets a target for the laying flock sector to ensure that no more than 2% of adult breeding flocks with more than 350 birds remain positive for the regulated *Salmonella* serovars annually. The EU target for laying flocks is based on the serovars considered of greatest public health significance at the time of drafting of the legislation (the most frequent serovars in human cases): *S*. Enteritidis and *S*. Typhimurium including the monophasic variants (Regulation (EU) No. 517/2011 added the monophasic *Salmonella* Typhimurium variants S. 1,4,[5],12:i:- as regulated/target *Salmonella* ssp. within the requirements of the *Salmonella* National Control Programmes). The eggs from any laying flock found to be infected with a regulated *Salmonella* serovar according to the protocol outlined above are placed under official control and the requirements of Regulation (EC) No. 2160/2003 are implemented. Therefore, if a laying flock is found to be infected with *S*. Enteritidis or *S*. Typhimurium including the monophasic variants, the flock is placed under official control. The eggs from that flock are placed under restriction and can only be sold for heat treatment. The operator can request additional testing of the flock at their own cost as per Regulation (EC) No.1237/2007. As well as collecting the operator's choice of sampling matrix as set out in this legislation, officials may also collect five bird carcases for antimicrobial residues testing. If this test is negative the restrictions are lifted, but additional inspections may be scheduled on a risk basis. If the optional additional sampling permitted under Regulation (EC) No. 1237/2007 is positive, or is not undertaken, all other flocks on the premises are sampled, and any which are found to be positive will also be restricted and have

[77] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included. It is of particular interest whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

their eggs restricted. The operator may request additional testing of those flock(s) at their own cost as per Regulation (EC) No.1237/2007. The eggs from positive flocks remain under restrictions and can only be sold for heat treatment for the life of the flock. The flock following on after the infected flock has an official NCP sample taken at 22-26 weeks of age. In all cases visits are made to the farm by government officials. They may carry out an epidemiological investigation and provide advice to the food business operator on the control of *Salmonella*.

According to Commission Regulation (EC) No. 1177/2006, the administration of antimicrobials to any bird of the species *Gallus gallus* as a specific method to control *Salmonella* is prohibited.

Live vaccines are not authorised for use in birds during the laying period. Otherwise, there are no restrictions on the use of *Salmonella* vaccines which have a marketing authorisation. Codes of Good Practice in the control of *Salmonella* on poultry farms and in the production, handling and transport of feed, as well as advice on rodent control, have been published in collaboration with the poultry industry.

23.3. Notification system in place to the national competent authority[78]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-approved private laboratories testing under the Salmonella legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority

The main provisions of the Control of *Salmonella* in Poultry Order relevant to the laying chicken control programme are:

- Owners of poultry flocks (of more than 250 birds) must be registered. Information supplied should include the name and address of the holding, the number (and species) of laying flocks on the holding and the number of poultry in each laying flock.

- Flock owners are required to record the movements of birds, chicks or eggs onto and off the premises, including dates of movements, numbers of poultry, chicks or eggs moved, their ages, building/ flock identity and the addresses of source or destination premises. This information must be made available for inspection on request by a

[78] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

government authorised official. Owners must also inform officials with two weeks' notice of the expected date of movements to the laying phase or laying unit and also the date on which the flock is expected to reach the end of the production cycle. This is done to facilitate the collection of the necessary official samples.

- The owner/operator is required to maintain records of the dates of sampling, type of samples collected, the identity of the building, flock or holding sampled, and the age of each flock sampled. Owners should also keep a record of the test result and name of laboratory used.

23.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[79]

One isolation of *Salmonella* Uganda, one isolation of *S.* Idikan and one isolation of *S*. Dublin were isolated in laying chicken flocks in Northern Ireland in 2024. One regulated serovar (*S*. enteritidis) was identified from Northern Ireland laying chicken flocks sampled under the *Salmonella* NCP during 2024. Therefore, Northern Ireland continued to achieve the laying chicken target as set in EU Regulation.

23.5. Additional information

The majority of *Salmonella* incidents reported in most animal and bird species in Northern Ireland are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. However, the *Salmonella* National Control Programmes (NCPs) apply to *Gallus gallus* and turkeys. In these species the vast majority of isolations are made as a result of NCP testing.

[79] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination. It is important to analyse results from flocks at various production levels, as well as the corresponding serovar distributions. Additionally, assessing the impact of the control programmes on the prevalence and number of human cases is highly relevant.

24. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in broiler flocks of *Gallus gallus*

24.1. Monitoring/Surveillance/Control programmes system[80]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EU) No. 200/2012) and in the Northern Ireland *Salmonella* National Control Programme (NCP) for chickens producing meat for human consumption (broilers). According to the requirements of the *Salmonella* National Control Programme, mandatory sampling is required within 3 weeks of the birds being sent to slaughter. Routine Official Control Samples are collected once annually from 10% of holdings with more than 5,000 birds.

The NCP sample must consist of a minimum of 2 pairs of boot swabs taken so it is representative of the whole area in the house to which the birds have access. In flocks of less than 100 broilers, where it is not possible to take boot swabs, hand drag swabs may be used. Other operator voluntary monitoring can include additional boot swabs, litter samples, dust samples, rodent droppings, swabs taken from empty houses, transport vehicles etc.

Case definition: Culture and isolation of *Salmonella* (field strain) from samples taken from the flock or directly associated with its environment. Reports of *Salmonella* isolates under the relevant legislation are classed as positive. A flock is counted as positive once only during the year, regardless of the number of tests carried out/isolates obtained. A flock is defined as poultry of the same health status kept on the same holding and in the same enclosure and constituting a single epidemiological unit and, in the case of housed poultry, includes all birds sharing the same airspace. The laboratory testing method is ISO 6579-1: 2017 - Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of *Salmonella* – Part 1: Detection of *Salmonella* spp. (MRSV method for primary production samples.)

[80] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. For *Salmonella* control programmes, should be described whether the methods of sampling were in accordance with the Annexes of Commission Regulations (EU) No 200/2010, No 517/2011, No 200/2012 or No 1190/2012.

24.2. Measures in place[81]

Regulation (EC) No. 2160/2003 and Regulation (EU) No. 200/2012 lay down harmonised rules for the monitoring and control of *Salmonella* in broiler flocks, which have been implemented in the Northern Ireland *Salmonella* National Control Programme (NCP). The NCP is enforced by the Control of *Salmonella* in Broiler Flocks Scheme Order (Northern Ireland) 2009. This national legislation enforces the requirements of the NCP required to meet the target for reduction in *Salmonella* prevalence set out in EU legislation. The NCP applies to all operators, except where the operator produces small quantities of product provided direct to the consumer or via local retailers which only supply the final consumer or where all production is for private domestic use only. Regulation (EU) No. 200/2012 sets a target for the broiler sector to ensure that no more than 1% of broiler flocks are detected positive for *Salmonella* of greatest human health significance annually. The EU target is based on the two most common serovars in human cases which are *S*. Enteritidis and *S*. Typhimurium (including monophasic strains). According to Commission Regulation (EC) No. 1177/2006, the administration of antimicrobials to any bird of the species *Gallus gallus* as a specific method to control *Salmonella* is prohibited. The same legislation also prohibits the administration of any live *Salmonella* vaccine to any bird of the species *Gallus gallus* where the manufacturer does not provide an appropriate method to distinguish bacteriologically wild-type strains of *Salmonella* from vaccine strains.

If *S.* Enteritidis or *S.* Typhimurium (including monophasic strains) is detected in an operator or official sample, the flock is placed under official control. It is the responsibility of the food business operator to notify the Official Veterinarian at the slaughterhouse of the *Salmonella* status of the flock prior to slaughter so that suitable precautions can be put in place to prevent the possibility of cross-contamination and to minimise the risk to public health. In Northern Ireland, the majority of flocks are culled on farm and disposed of as Animal By-Product. Following depopulation of the positive flock(s), the house(s) remains under official control until cleaning and disinfection has been carried out and shown to be satisfactory by microbiological culture of samples taken from the empty house. The Competent Authority collects official samples from the next crop in the affected house as well as from all other

[81] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

flocks on the holding. If any of these samples are positive, a restriction notice is served on the flock(s), requiring supervised cleansing and disinfection and further sampling. Visits are made to the farm by Government officials. They may carry out an epidemiological investigation and provide advice to the food business operator on the control of *Salmonella* if the *Salmonella* isolated is considered to be of public health significance.

The *Salmonella* monitoring results for all eligible broiler flocks must be included as part of the Food Chain Information documentation, accompanying each batch to the slaughterhouse (Annex II of Regulation (EC) No. 853/2004).

There are no restrictions on the use of *Salmonella* vaccines which have a Marketing Authorisation. However, vaccination is not generally used in broiler flocks in Northern Ireland. Codes of Good Practice in the control of *Salmonella* on broiler farms and in the production, handling and transport of feed, as well as advice on rodent control, have been published in collaboration with the poultry industry.

24.3. Notification system in place to the national competent authority[82]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-approved private laboratories testing under the Salmonella legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

The main provisions of the Control of *Salmonella* in Poultry Order relevant to broiler flocks control programme are:

- Owners of broiler flocks must be registered within three months of the establishment of the holding. Information supplied should include the name and address of the holding, the number flocks on the holding, the number of chickens in each flock and where there is more than one flock on the holding, the identification of each flock.

● Flock owners are required to record the movements of chickens onto and off the premises, including dates of movements, numbers of chickens moved, their ages, building/ flock identity and the addresses of source or destination premises including slaughterhouses. This

[82] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

information must be made available for inspection on request by a government authorised official.

The owner/operation is required to maintain records of the dates of sampling, type of samples collected, the identity of building, flock or holding sampled and the age of each flock sampled. Owners should also keep a record of the test result and name of laboratory used.

24.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[83]

Salmonella Mbandaka was the most frequently isolated *Salmonella* from broiler chicken flocks in 2024. Five regulated serovars (4 x *S*. monophasic Typhimurium; 1 x *S*. Typhimurium) were identified from Northern Ireland broiler chicken flocks sampled under the *Salmonella* NCP during 2024. Therefore, Northern Ireland continued to achieve the broiler chicken target as set in EU Regulation.

24.5. Additional information

The majority of *Salmonella* incidents reported in most animal and bird species in Northern Ireland are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. However**,** the *Salmonella* National Control Programmes (NCPs) apply to *Gallus gallus* and turkeys. In these species the vast majority of isolations are made as a result of NCP testing.

[83] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination. It is important to analyse results from flocks at various production levels, as well as the corresponding serovar distributions. Additionally, assessing the impact of the control programmes on the prevalence and number of human cases is highly relevant.

25. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in breeding turkey flocks

25.1. Monitoring/Surveillance/Control programmes system[84]

There were no adult breeding turkey flocks in Northern Ireland in 2024.

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EU) No. 1190/2012) and in the Northern Ireland *Salmonella* National Control Programme (NCP) for breeding turkey flocks. Day old poults are sampled according to the requirements of the NCP, which requires mandatory sampling on the day of arrival, comprising at least the following from each hatchery delivery:

Ten poult box liners for every batch of poults delivered.
All poults' dead on arrival or culled on arrival from each hatchery delivery.

Rearing flocks are sampled according to the requirements of the NCP. Mandatory sampling is required at four weeks of age and two weeks before moving to the laying phase or laying unit as follows:

A minimum of five pairs of boot swabs to be representative of the whole area in the house to which the birds have access: or
one pair of boot swabs and one 900 square cm dust swab; or
four hand-held 900 square cm dust swabs if less than 100 turkeys present.

Other operator voluntary monitoring can include rodent droppings, dust samples, swabs from transport vehicles etc.

Flocks which are in production are then sampled according to the requirements of the NCP, which requires mandatory sampling every three weeks during the laying/production period of

[84] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. For *Salmonella* control programmes, should be described whether the methods of sampling were in accordance with the Annexes of Commission Regulations (EU) No 200/2010, No 517/2011, No 200/2012 or No 1190/2012.

the flock and within three weeks before the birds are moved to the slaughterhouse (or six weeks if moved to slaughter at more than 100 days of age). Sampling can be carried out at the holding or at the hatchery. If at the holding and provided the holding has had no positive results in at least the previous two calendar years and the national target has been achieved, sampling can be at 4-week intervals.

Holding sampling:

A minimum of five pairs of boot swabs to be representative of the whole area in the house to which the birds have access: or
one pair of boot swabs and one 900 square cm dust swab; or
four hand-held 900 square cm dust swabs if less than 100 turkeys present.

Hatchery sampling:

Visibly soiled liners from five hatcher baskets covering one square metre area; or
900 square cm swabs from five places in hatcher or hatcher baskets; or
10 grams broken eggshells from each of 25 hatcher baskets.

Operator voluntary monitoring can include rodent faeces and other environmental samples, dust samples, swabs taken from empty houses, transport vehicles, meconium samples etc.

One routine Official Control Sample is collected annually from all flocks of adult breeding turkeys between 30 and 45 weeks of age.

25.2. Measures in place[85]

There are no restrictions on the use of *Salmonella* vaccines which have a Marketing Authorisation.

[85] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included. It is of particular interest whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

Regulation (EC) No. 2160/2003 lays down harmonised rules for the monitoring and control of *Salmonella* in turkey flocks which have been implemented in the Northern Ireland *Salmonella* National Control Programme (NCP). The Regulation is enforced through Control of *Salmonella* in Turkey Flocks Scheme Order (Northern Ireland) 2010. This national legislation enforces the requirements of the NCP required to meet the target for reduction in *Salmonella* prevalence set out in EU legislation. Regulation (EU) No. 1190/2012 sets a target for the turkey sector to ensure that no more than 1% of breeding turkey flocks (and no more than 1% of fattening turkey flocks) are detected positive for *Salmonella* of human health significance annually. The EU target is based on the two most common serovars in human cases which are *S*. Enteritidis and *S*. Typhimurium (including monophasic strains).

The NCP for breeding turkeys applies to all operators who keep 250 or more breeding turkeys over a calendar year.

Any breeding flock found to be infected with *S*. Typhimurium or *S*. Enteritidis is compulsorily slaughtered with compensation. When *Salmonella* Enteritidis or *Salmonella* Typhimurium (including monophasic strains) is suspected in a breeding flock, the flock is placed under official control. An investigation is carried out on all the flocks on the site. Following compulsory slaughter of the positive flock(s), the flock(s) remains under official control until cleaning and disinfection has been carried out and shown to be satisfactory by microbiological culture of samples taken from the empty house. Eggs from the positive flock are removed from the hatchery and destroyed. Eggs may be used for human consumption if they are treated in a manner that guarantees elimination of *S*. Typhimurium and *S*. Enteritidis.

The Control of *Salmonella* in Turkey Flocks Orders state that no person may administer any antimicrobial to turkeys as a specific method to control *Salmonella*. Codes of Good Practice in the control of *Salmonella* on turkey farms and in the production, handling, and transport of feed, as well as advice on rodent control have been published in collaboration with the poultry industry

25.3. Notification system in place to the national competent authority[86]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of Salmonella in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-

[86] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

approved private laboratories testing under the Salmonella legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

25.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[87]

There were no adult breeding turkey flocks in Northern Ireland in 2024.

25.5. Additional information

The majority of Salmonella incidents reported in most animal and bird species in Northern Ireland are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. However, the Salmonella National Control Programmes (NCPs) apply to Gallus gallus and turkeys. In these species the vast majority of isolations are made as a result of NCP testing.

[87] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination. It is important to analyse results from flocks at various production levels, as well as the corresponding serovar distributions. Additionally, assessing the impact of the control programmes on the prevalence and number of human cases is highly relevant.

26. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in fattening turkey flocks

26.1. Monitoring/Surveillance/Control programmes system[88]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EU) No. 1190/2012) and in Northern Ireland *Salmonella* National Control Programme (NCP) for fattening turkey flocks producing meat for human consumption. According to the requirements of the *Salmonella* National Control Programme, mandatory sampling is required within 3 weeks of the birds being sent to slaughter, unless due to be slaughtered at more than 100 days of age or for organically reared birds produced according to Commission Regulation (EC) 889/2008 when sampling is required within 6 weeks of slaughter. The NCP sample must consist of a minimum of two pairs of boot swabs or one pair of boot swabs and one 900 square cm dust swab taken so as to be representative of the whole area in the house to which the birds have access. In flocks of less than 100 turkeys, where it is not possible to take boot swabs, four hand-held 900 square cm dust swabs may be used.

Other operator voluntary monitoring can include additional boot swabs, litter samples, dust samples, rodent droppings, swabs taken from empty houses, transport vehicles etc.

Routine Official Control Samples are collected once annually from 10% of holdings with more than 500 birds.

Bacteriological method: ISO 6579-1: 2017 - Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of *Salmonella* -- Part 1: Detection of *Salmonella spp*. (MRSV method for primary production samples).

[88] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. For *Salmonella* control programmes, should be described whether the methods of sampling were in accordance with the Annexes of Commission Regulations (EU) No 200/2010, No 517/2011, No 200/2012 or No 1190/2012.

26.2. Measures in place[89]

There are no restrictions on the use of *Salmonella* vaccines which have a Marketing Authorisation.

Regulation (EC) No. 2160/2003 lays down harmonised rules for the monitoring and control of *Salmonella* in turkey flocks which have been implemented in the Northern Ireland *Salmonella* National Control Programme (NCP). The Regulation is enforced through the Control of *Salmonella* in Turkey Flocks Scheme Order (Northern Ireland) 2010. This national legislation enforces the requirements of the NCP required to meet the target for reduction in *Salmonella* prevalence set out in EU legislation. Regulation (EU) No. 1190/2012 sets a target for the turkey sector to ensure that no more than 1% of fattening turkey flocks are detected positive for *Salmonella* of human health significance annually. The EU target is based on the two most common serovars in human cases which are S. Enteritidis and S. Typhimurium (including monophasic strains). The Control of *Salmonella* in Turkey Flocks Order states that no person may administer any antimicrobial to turkeys as a specific method to control *Salmonella*.

The NCP for fattening turkeys applies to all operators, except where the operator produces small quantities of product provided direct to the consumer or via local retailers which only supply the final consumer or where all production is for private domestic use only.

If *S.* Enteritidis or *S.* Typhimurium (including monophasic strains) is detected in an operator or official sample, the flock is placed under official control. It is the responsibility of the food business operator to notify the Official Veterinarian at the slaughterhouse of the *Salmonella* status of the flock prior to slaughter so that suitable precautions can be put in place to prevent the possibility of cross-contamination and to minimise the risk to public health. Following depopulation of the positive flock(s), the house(s) remains under official control until cleaning and disinfection has been carried out and shown to be satisfactory by microbiological culture of samples taken from the empty house. The Competent Authority collects official samples

[89] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included. It is of particular interest whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

from the next crop in the affected house as well as from all other flocks on the holding. If any of these samples are positive, a restriction notice is served on the flock(s), requiring supervised cleansing and disinfection and further sampling.

Codes of Good Practice in the control of *Salmonella* on turkey farms and in the production, handling and transport of feed, as well as advice on rodent control have been published in collaboration with the poultry industry.

26.3. Notification system in place to the national competent authority[90]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-approved private laboratories testing under the Salmonella legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

26.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[91]

One regulated serovar (*S*. monophasic Typhimurium) was identified from Northern Ireland fattening turkey flocks sampled under the *Salmonella* NCP during 2024. Therefore, Northern Ireland continues to achieve the fattening turkey target as set in EU Regulation.

26.5. Additional information

The majority of *Salmonella* incidents reported in most animal and bird species in Northern Ireland are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. However, the *Salmonella* National Control Programmes (NCPs) apply to *Gallus gallus* and turkeys. In these species the vast majority of isolations are made as a result of NCP testing.

[90] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[91] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination. It is important to analyse results from flocks at various production levels, as well as the corresponding serovar distributions. Additionally, assessing the impact of the control programmes on the prevalence and number of human cases is highly relevant.

27. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in animals other than poultry

27.1. Monitoring/Surveillance/Control programmes system[92]

Monitoring for *Salmonella* in most animal and bird species may be carried out (on a voluntary basis) by the food business operator. Therefore, reports of *Salmonella* usually arise from samples sent by a private veterinarian for diagnostic purposes. Government funded scanning surveillance programmes are delivered by the Agri-food and Biosciences Institute (AFBI). These programmes are built upon the subsidised diagnosis and disease investigation service offered to livestock farmers through their private veterinary surgeons. The samples submitted are usually either environmental samples or faeces or whole carcases or organs collected at postmortem. Reports of *Salmonella* isolates under the Zoonoses Order are classed as positive.

27.2. Measures in place[93]

Specific domestic legislation covering *Salmonella* in animals exists in Northern Ireland. In Northern Ireland the Zoonoses Order 1991 lists any mammal except man; any four-footed beast which is not a mammal; snakes and all species of birds as species for which salmonella isolations must be reported. The Zoonoses Order and other domestic legislation also give powers to investigate a suspicion that *Salmonella* is present on a premises and also disease control powers. However, the control powers (such as officially restricting the movement of positive animals or flocks) are rarely used to control salmonella when it is identified in animals

[92] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[93] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. The vaccination policy or approved vaccination programme should be included. It is of particular interest whether vaccination is mandatory or voluntary or recommended for certain animal populations. The description should include, at least, a description of the vaccine, the characteristics of the animals to be vaccinated (age, sex), the area where vaccination is to be implemented and special measures such as marking the vaccinated animals, etc.

or birds apart from in relation to the *Salmonella* National Control Programmes (NCPs) if a regulated serovar is identified.

27.3. Notification system in place to the national competent authority[94]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-approved private laboratories testing under the *Salmonella* legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

27.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[95]

In Northern Ireland there were 85 isolations of *Salmonella* in 2024 in animals other than poultry (as covered by statutory reporting requirements in Northern Ireland) which represents a decrease of 39.7% compared with 2023 (141 isolations). These were 49 isolations from cattle, 8 from pigs, 23 from sheep, 1 from a dog, 1 from a pigeon, 1 from ducks, 1 from a goat and 1 from a reptile.

Relative to 2023, there were fewer isolations from pigs (8 vs. 11 isolations), cattle (49 vs. 94 isolations) and sheep (23 vs. 33 isolations). There was also one isolation from ducks, goats and a reptile compared with none during 2023. There was one isolation from a pigeon and one from a dog which is the same as compared to 2023.

Trends were also variable across serovars; for example, compared to 2023 isolations of *S.* Typhimurium increased (7 vs 4) and *S*. enteritidis (1 vs. 0). In contrast, there were fewer isolations of *S*. monophasic Typhimurium (6 vs. 23 isolations) and of *S*. Dublin (37 vs. 73 isolations). *Salmonella* Dublin remained the most commonly isolated serovar in cattle. *Salmonella* Typhimurium monophasic was the most commonly isolated serovar from pigs in and *Salmonella* enterica, subspecies diarizonae was the most commonly isolated serovar from sheep in Northern Ireland in 2024.

[94] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[95] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

27.5. Additional information

The majority of incidents reported are from samples taken for diagnostic purposes, and not from samples from healthy animals or taken during a structured survey. Therefore, the sample submission rate and the number of *Salmonella* incidents recorded on an annual basis is subject to external influencing factors which can impact on observed trends (such as clinical presentation of disease, economic influences, awareness of a disease etc).

28. Description of Monitoring/Surveillance/Control programmes system: *Salmonella* in feed

28.1. Monitoring/Surveillance/Control programmes system[96]

Within Department of Agriculture, Environment and Rural Affairs, the Agri-Food Inspection Branch conduct surveillance sampling for *Salmonella* of feed materials. Additional sampling may be conducted if this is required following assessment of risk.

28.2. Measures in place[97]

The Department of Agriculture, Environment and Rural Affairs has a Salmonella in Feed Protocol in place which outlines the response to *Salmonella* isolates from animal feeds in Northern Ireland.

28.3. Notification system in place to the national competent authority[98]

The Zoonoses Order (Northern Ireland) 1991 specifies that all isolations of *Salmonella* in a sample taken from an animal or bird or its surroundings, or from any carcase, product or feeding stuff must be reported to a veterinary inspector and a culture supplied to a lab nominated by the Department of Agriculture, Environment and Rural Affairs. Government-approved private laboratories testing under the *Salmonella* legislation are required to provide monthly returns on tests conducted under this legislation to the Competent Authority.

[96] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing).

[97] Report the control program or strategies in place, including vaccination if relevant. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

[98] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

28.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[99]

Although *Salmonellas* are found in feed materials, the processes involved in animal feed production should normally eliminate them. Animal feed may become contaminated on farm if poorly stored and not kept vermin free. There is the potential, if *Salmonella* serovars contaminate feed during the manufacturing process, for the serovar to infect a large number of animals. It is most important that the principles of HACCP are applied to manage this risk.

One isolation of *Salmonella* Coquilhatville in feed was reported from official samples in Northern Ireland in 2024.

28.5. Additional information

29. General evaluation: *Trichinella*

29.1. History of the disease and/or infection in the country[100]

Trichinosis is a food-borne parasitic disease that is spread primarily by the consumption of raw or undercooked meat products containing nematode larvae of the Trichinella spp. Symptoms are associated first with the gastrointestinal tract and later with the muscles as the worm penetrates and develops there. The main source of human infection is raw or undercooked meat products from pigs or wild boar, but meat products from other animals may also be a source (e.g. horse, bear and walrus). There is no evidence to indicate that Trichinella exists in pigs or wild boar in Northern Ireland, as shown by the negative results from carcasses and wildlife that are tested annually.

Humans: There have been no known cases of human trichinosis acquired from infected meat from animals reared in Northern Ireland either in the UK or in other countries that have received meat and meat products from Northern Ireland since 1975. Overall, there were no laboratory-confirmed cases of Trichinellosis between 1987 and 1999 in the UK.

Animals: In Northern Ireland, the last confirmed case of trichinellosis in pig meat was in 1979. This case was linked to suspected illegally imported meat.

[99] Provide the results for minimum five years. Evaluate the significance of positive findings in feed, animals, and food, and their connection to human cases, considering the role of feed in animal infections and animals in food contamination.

[100] Provide the description of history of the disease, stating whether a disease is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

There is no evidence to indicate that Trichinella exists in pigs or wild boar in the UK, as shown by the negative results from carcasses and wildlife that are tested annually.

29.2. Evaluation of status, trends and relevance as a source for humans[101]

During 2024 a total of 1,318,218 muscle samples from domestic swine were tested in laboratories designated by the Food Standards Agency (FSA) in Northern Ireland in accordance with the derogation provided in Article 40 of Regulation (EU) 2017/625. All were negative.

In NI in 2024 an additional 1138 muscle samples from domestic swine were examined for Trichinella spp as part of a surveillance scheme funded by FSA, all were negative.

A survey of Trichinella in wildlife is carried out for the FSA. In total, 310 wildlife (fox) samples were examined during 2024, and all were negative for Trichinella spp.

The results of sampling in 2024 are comparable to those for 2023. To note that the total number of muscle samples tested has decreased because one NI slaughterhouse availed of the derogation provided in Article 3(3) of Regulation (EU) 2015/1375. Under this derogation, a total of 539,966 pigs were exempted from testing under this derogation.

29.3. Any recent specific action in the Member State or suggested for the European Union[102]

29.4. Additional information

[101] Provide the epidemiological evaluation (trends and sources) over time until current situation for the different relevant matrixes (food, animal). If relevant specify the official "disease status" for the whole country and/or specific regions within the country. A description of the status of holdings (e.g. whether holdings are officially recognised to apply controlled housing conditions in relation to *Trichinella* in accordance with Commission Regulation (EC) No 2015/1375 Annex IV, Chapter I, Point A) should be included.

[102] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

30. Description of Monitoring/Surveillance/Control programmes system: *Trichinella* in domestic animals

30.1. Monitoring/Surveillance/Control programmes system[103]

From January 2006, enhanced testing for Trichinella, by the EU pepsin digest method, was extended to the domestic slaughter of all boars, sows and farmed wild boar that are processed in an approved slaughterhouse for human consumption and feral wild boar processed in an Approved Game Handling Establishment.

Testing of samples in Northern Ireland is undertaken at designated official control laboratories either in the slaughterhouse or at a dedicated laboratory site. All official control laboratories involved in Trichinella testing take part in a laboratory quality assurance programme organised by the UK National Reference Laboratory and overseen by the NI NRL. In addition, all official control laboratories are audited on a two-year cycle.

The National Reference Laboratory (NRL) for Trichinella in Northern Ireland is located at the Department of Agriculture, Food and the Marine (DAFM) facility at Backweston in the Republic of Ireland.

Surveillance system: Regulation (EC) No. 2015/1375 lays down specific rules on official controls for Trichinella in meat. It also lays down the methods of detection to be used and requires carcases of domestic swine to be sampled in slaughterhouses and tested for the presence of Trichinella as part of the post-mortem inspection. Carcasses of horses, wild boar and other farmed and wild animal species susceptible to Trichinella infection are also required to be sampled in slaughterhouses or game handling establishments. Carcasses of domestic swine kept solely for fattening and slaughter can be exempt from testing if they come from a holding or category of holding that has been officially recognised by the Competent Authority as operating under controlled housing conditions in accordance with the criteria specified in

[103] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. Include, when available, information on *Trichinella* testing in meat inspection, specifying whether all slaughtered domestic pigs and horses are tested, as well as details on monitoring and surveillance schemes or programmes for farmed boar, horses, breeding pigs, and fattening pigs.

Regulation (EU) No. 2015/1375. Systematic testing of pigs from a holding or a compartment officially recognised as applying controlled housing conditions may also be reduced if the holding or compartment can demonstrate that no autochthonous Trichinella infestations in domestic swine have been detected in the Member State in the past three years and that prevalence of Trichinella does not exceed one per million in that population.

Northern Ireland has been officially recognised by the EU as a country which may apply the derogation available which exempts pigs from holdings applying controlled housing conditions from testing. During 2023, one NI slaughterhouse availed of the derogation provided in Article 3(3) of Regulation (EU) 2015/1375. Membership of the Red Tractor Assurance Scheme has been officially recognised by the NI competent authority as verification of applying controlled housing conditions. All pigs supplied during the period of the derogation were sourced from members of the scheme.

As per the legislation for the abattoir testing of sows, boars and wild boar together with a proportion of finishing pigs. Sample size 1 gram for domesticated pigs, 2 grams for breeding animals and 5 grams for farmed/ wild boar for the detection of Trichinella spp. larvae. From January 2006, testing for Trichinella spiralis has been by the EU muscle digest method as per legislation. Other equivalent methods allowed in the legislation are not currently used in Northern Ireland.

30.2. Measures in place[104]

As above

30.3. Notification system in place to the national competent authority[105]

The UK has a notification system in place as per the legislation for the abattoir testing of domestic pigs. However, since 1979, no domestic pig has been found to have Trichinella.

[104] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. Include information on controlled housing conditions on pig farms, effective waste and garbage management, pest control, and education and training for farmers and the public. Additionally, include biosecurity measures at the farm or holding level, as well as recommendations for zoos.

[105] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

There is a contingency plan in place in the event of a positive or inconclusive test result which includes the roles and responsibilities of key organisations and people. This forms an annex to the Manual for Official Controls used by operational staff. Full details below.

Day 1 – Trichinella suspected by either "on" or "off site" laboratories

1. The lab manager will immediately inform the Official Veterinarian (OV) at the relevant slaughterhouse of the suspected positive result.
2. The OV will detain all carcases from the pooled sample (including any carcases from the pooled sample that may have been despatched to other approved establishments under specific warm meat authorisations) and will immediately inform the regional DAERA D/SVO who will in turn, immediately inform the Food Standards Agency in Northern Ireland (FSA in NI) at NIOperationalpolicy@food.gov.uk.
3. The OV will also detain all parts of carcases and batches of offals containing striated muscle which have originated from the pigs making up the positive/inconclusive pooled sample.
4. The FSA in NI will advise on the procedure for the collection and despatch of further samples to the Northern Ireland National Reference Laboratory (NI NRL) which is located at DAFM Laboratories, Backweston, Cellbridge, Co Kildare, W23 X3PH for re-test, and if there are any additional instructions to be followed.
   NB: In the unlikely event that traceability of a suspected positive result cannot be established with certainty, all of the susceptible animals slaughtered on the day that the sample was taken will be detained by the OV.
5. The FSA in NI will also immediately inform FSA Meat Hygiene Policy Division
6. The OV will re-sample all detained carcases following the instructions in Ch 2.4, Section 5 of the Manual for Official Controls (MOC).
7. These re-samples should be 2 x 20g samples, individually identified and bagged, so that the second (5 animal x 20g) pooled digests and then the third (individual 20g) digests can be tested without the need to go back to re-sample carcases a third time.
8. Both sets of re-samples should be sent to the NI NRL for confirmatory analysis. The second set of re-samples will be analysed at the NI NRL as a pooled sample and if Trichinella is confirmed, the third set of re-samples will be analysed on an individual basis.
9. At this stage the OV should commence the traceability exercise to determine the origin of all the detained carcases associated with the suspected positive result. The OV should be able to establish the names and addresses of all farms from which the detained pigs originated from FBO records and movement documentation.

Day 2 – Trichinella confirmed by National Reference Laboratory (NRL)

1. On confirmation of a positive result, the NI NRL will inform the OV at the slaughterhouse and FSA in NI via phone and confirm via email using the contact details below.

- Head of Operational Policy & Delivery – Elvira.Diez@food.gov.uk – 07799 476515
- Trichinella Policy Lead: – Billy.Armstrong@food.gov.uk – 07773 644312
- Operational Policy & Delivery: NIOperationalpolicy@food.gov.uk

2. If further re-sampling is required for any reason, the OV will follow the specific instructions issued by the NI NRL where necessary. The OV will email traceability information to DAERA D/SVO and FSA in NI using the email addresses above.
3. While awaiting the result of the individual samples as part of the third test, Meat Hygiene Policy Division will convene an urgent meeting involving

- FSA representatives from the Incidents, Legal and Communications Divisions
- the DAERA D/SVO
- the OV and
- FSA in NI

4. The three main aims of the meeting will be:

a) to consider, decide and instruct if appropriate, on the imposition of movement restrictions (see annex 6 of the UK contingency plan);

b) to consider, decide and instigate, if appropriate, the possible withdrawal and recall of meat and

c) to consider, decide, and instigate the epidemiological investigation on the farm(s) of origin with the principal objective of establishing.

i. previous supply of pigs eg up to a week before, especially if the supply was to a different slaughterhouse where there is no Trichinella testing;

ii. if all positive carcases in a pool from the third testing stage (i.e. 5 carcases) are adult pigs, it is probable that they will have originated from different farms. If this is the case, the farm investigation will need to wait until the result of the third examination which will show which carcase(s) is/are infected and the farm(s) of origin.

Day 3 – Trichinella Confirmed in an Individual Carcase by the NRL

1. The NI NRL will communicate the test result of the third diagnosis directly to FSA in NI by

phone and email and arrange for any positive samples to be analysed for species identification.

2. Instructions in point 3 and 4 of Day 2 will apply if they have not already been implemented.
3. Food Safety - Meat Hygiene Policy Division will inform the Commission of the findings, the origin of the positive sample(s) and the control measures in place (see annex 4 of the UK contingency plan).
4. A series of Questions and Answers on Trichinella will be sent to FSA Communications Division and placed on the FSA's website, together with updates on the situation and links to relevant websites (see annex 5 of the UK contingency plan).
5. The farm(s) level investigation will be carried out by DAERA with any further actions dependent on their preliminary findings. Two scenarios are envisaged:

a) If only adult pigs are/were sent from the suspected farm(s), no conditions of movement restriction will be imposed as all adult pigs in the UK are tested for Trichinella;

b) If fattening pigs were sent for slaughter the previous week or are intended to be sent then:

i. movement restrictions on the farm will be considered. Pigs will only be released if permitted by the DAERA officer or; where subsequent batches of live animals are sent to slaughterhouses where Trichinella testing is carried out and the animal(s) are accompanied with appropriate Food Chain Information (see annex 7 of the UK contingency plan);

ii. DAERA D/SVO will investigate whether or not previous fattening pigs were tested for Trichinella. If the pigs were not tested, the identified carcases will be, as far as practicable, detained for testing while further investigation takes place. If meat from non-tested carcases has been placed on the market, the FSA in NI will determine the measures to be taken at retail and consumer level, including if a Food Alert for Action or a Food Alert for Information is necessary.

On confirmation of the positive result the FSA in NI will instruct DAERA to dispose of the positive carcase(s) and its body parts as a Category 2 Animal by-product.

30.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[106]

Since January 2006 all boars, sows, farmed wild boar processed in a slaughterhouse and feral wild boar processed through an Approved Game Handling Establishment together with a proportion of finishing pigs are routinely monitored for the presence of Trichinella. There was no evidence to indicate that trichinellosis existed in the UK domesticated pig population or the farmed/wild boar population in 2020. The last positive diagnosis in pigs in Great Britain was in 1978. In Northern Ireland, the last confirmed case of Trichinellosis in pig meat was in 1979. This case was linked to suspected illegally imported meat.

In humans, European outbreaks of trichinellosis are regularly reported and are mainly linked to the consumption of raw or undercooked meat from wild boar, back yard pigs or horses. In contrast, there have been no human cases acquired from meat produced in the UK for over 40 years.

Eleven cases of trichinellosis were diagnosed in the UK between 2000 and 2014, including an outbreak of eight cases in England and Wales in 2000 associated with the consumption of imported meat products. The remaining three cases were travel related: one in England and Wales in 2001, one in Scotland in 2010 in a person who had eaten partially cooked meat in France, and the other in Scotland in 2014 which had been acquired in the Czech Republic.

30.5. Additional information

Adult pigs (sows and boars) are not routinely slaughtered in Northern Ireland, arrangements are in place for the transfer of information where a positive or inconclusive test result is reported in a sample where the animal originated in Northern Ireland.

All domestic swine originating from countries and/or regions not operating under controlled housing conditions are routinely sampled and tested for Trichinella. There is a system in place for the transfer of information where a positive or inconclusive test result is reported in a sample where the animal originated in one of those countries and/or regions. During 2024 a

[106] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases, considering the role of animals in food contamination. Include the analyses of the results addressing the outcomes of meat inspections for *Trichinella* spp., descriptions of positive cases and the identified *Trichinella* spp., the age of the affected animals, their management systems, the diagnostic methods used, the degree of infestation and the tested muscle, outdoor access during animals' lifetime, feeding practices, and any other relevant information.

total of 400,359 domestic swine originating from the Republic of Ireland were routinely sampled and tested in official control laboratories. All results were negative.

Horses

Regulation (EC) No. 2015/1375 lays down specific rules on official controls for Trichinella in meat. It also lays down the methods of detection to be used and requires carcases of horses to be sampled in slaughterhouses and tested for the presence of Trichinella as part of the post-mortem inspection.

There are no slaughterhouses approved for the slaughter of horses in Northern Ireland.

31. Description of Monitoring/Surveillance/Control programmes system: *Trichinella* in animals other than domestic animals

31.1. Monitoring/Surveillance/Control programmes system[107]

Wildlife surveillance

In Northern Ireland a total of 310 'roadkill' and 'shot' foxes were tested for Trichinella during 2024 as part of a wildlife survey funded by FSA. These were all negative.

31.2. Measures in place[108]

As above

[107] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme (e.g. detection of diseases, monitoring the occurrence, prove freedom of infection, a national survey study, or a combination of these) and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it. Include, when available, information on monitoring and surveillance schemes or programmes of wild boar, and other indicator animals, especially in wildlife, e.g. foxes, raccoon dogs.

[108] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

31.3. Notification system in place to the national competent authority[109]

On detection of Trichinella in wildlife samples, the official control laboratory is required to report immediately to FSA.

31.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[110]

All results negative

31.5. Additional information

32. General evaluation: Shiga toxin-producing *Escherichia coli* (STEC)

32.1. History of the disease and/or infection in the country[111]

During 2024 in Northern Ireland no official monitoring took place for Shiga toxin-producing Escherichia coli (STEC). Any data that was provided was from clinical investigation.

32.2. Evaluation of status, trends and relevance as a source for humans[112]

32.3. Any recent specific action in the Member State or suggested for the European Union[113]

32.4. Additional information

[109] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[110] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases, considering the role of animals in food contamination. Include analyses of the results from monitoring and control programs for animals other than pigs, with a particular focus on indicator animals and wild animals.

[111] Provide the description of history of the infection, stating whether the infection is (hyper) endemic, eradicated, or if sporadic cases occur in human population/animals. Historical epidemics (if any) can be described in general.

[112] Provide the epidemiological evaluation (trends and sources) over time until recent/current situation for the different relevant matrixes (food, animal).

[113] Describe the actions and measures undertaken to control specific zoonoses during the last five years. These actions and measures could include implementation of new legislation, recommendations issued, new control and monitoring programmes, etc. suggestions to the EU for the actions to be taken – this item provides an opportunity

33. Description of Monitoring/Surveillance/Control programmes system: Shiga toxin-producing *Escherichia coli* (STEC) in food

33.1. Monitoring/Surveillance/Control programmes system[114]

During 2024 in Northern Ireland no official monitoring took place for Shiga toxin-producing Escherichia coli (STEC) in food. Any data that was provided was from clinical investigation.

33.2. Measures in place[115]

33.3. Notification system in place to the national competent authority[116]

33.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[117]

33.5. Additional information

to propose measures to be taken by risk managers at EU level. Typically, this could involve suggestions for new EU legislation.

[114] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). If programme is approved by the EC, please provide link to the specific programme in the Commission`s website.

[115] Report the control program/strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of measures taken in case of positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately.

[116] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[117] Provide the results for minimum five years. Evaluate the significance of positive findings in food, and their connection to human cases (as a source of infection).

34. Description of Monitoring/Surveillance/Control programmes system: Shiga toxin-producing *Escherichia coli* (STEC) in animals

34.1. Monitoring/Surveillance/Control programmes system[118]

During 2024 in Northern Ireland no official monitoring took place for Shiga toxin-producing Escherichia coli (STEC) in animals. Any data that was provided was from clinical investigation.

34.2. Measures in place[119]

34.3. Notification system in place to the national competent authority[120]

34.4. Results of investigations and national evaluation of the situation, the trends and sources of infection[121]

34.5. Additional information

[118] Describe the monitoring/surveillance/control programmes in relation to the sampling scheme applied (sampling strategy, frequency of the sampling, type of specimen taken, methods of sampling (description of sampling techniques) and the testing scheme used to assign and define cases (case definition, diagnostic/analytical methods used, limit of detection of the method, diagnostic flow e.g. parallel testing or serial testing). The description should clarify the purpose (i.e. sampling strategy) of the monitoring/surveillance programme and/or whether there is only passive surveillance (i.e. clinical suspects) implemented or if monitoring/surveillance is combined with active surveillance (i.e. planned sampling). The target animal population should be clearly described, and it should be indicated whether the entire population was covered or only a subset of it.

[119] Report the control program or strategies in place. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. When relevant include a description of how eradication measures were implemented, in particular those measures taken in case of the positive findings, and any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation. If programme is approved by the EC, please provide link to the specific programme in the Commission`s website. Control programmes run by the industry/food business operators may also be included. The nature of the control programmes should be described, including whether the programme is, for example, voluntary or mandatory, national or regional, approved by the EU or at national level or co-financed. The main features of the programme should be given. It is advisable to report the information derived from official programmes and from programmes run by the industry separately. Biosecurity measures at the farm/holding level or recommendations for zoos should be also included.

[120] If a notification system is in place, give a description, including its legal basis and whether the notification is mandatory or not. Mandatory: Yes/No.

[121] Provide the results for minimum five years. Evaluate the significance of positive findings in animals, and their connection to human cases (as a source of infection), considering the role of animals in food contamination.

35. Food-borne Outbreaks

35.1. System in place for identification, epidemiological investigations and reporting of food-borne outbreaks[122]

Mandatory reporting of any incidents of suspected food poisoning reported to the Public Health Agency Northern Ireland (PHA) together with laboratory reporting of all positive results for the main gastrointestinal diseases. This data is reviewed regularly to identify possible clusters either temporally or geographically.

In addition, certain organisms (E. coli 0157, Salmonella sp and Listeria sp) are submitted to the national reference laboratory in England for whole genome sequencing which helps identify possible outbreaks. In the event of a suspected outbreak in other organisms these may also be sent to the reference laboratory for further testing and whole genome sequencing.

Probable or confirmed cases of the main bacterial organisms responsible for food outbreaks (with the exception of Campylobacter due to the much higher volume of this organism relative to the other bacterial organisms) are followed up with an interview by one of the local council environmental health officer (EHO) to complete a standard food poisoning questionnaire which are reviewed by health protection staff and details added to a case management system. Any suspected vehicles/venues are entered and an automated system will identify multiple occurrences of the same vehicle/venue which will be investigated and contact made with the local council EHO to review the venue and identify any causes for concern as well as possibly taking food and environmental samples for biological testing.

If a particular food has been identified as a possible source after epidemiological investigation this is brought to the attention of the Food Standards Agency (FSA) in N. Ireland who may investigate the producer/supplier to identify any concerns and also take samples for testing where appropriate. Conversely if the FSA had identified microbiological contamination of a food during routing samples the PHA will be notified so they can ascertain whether any of their current cases may be related.

[122] Describe the system and procedures for identifying, investigating, and reporting foodborne outbreaks in the reporting country. Include the authorities and institutions involved, their roles, coordination between authorities, the legal basis for activities, mandatory and voluntary activities, and reporting frequency. Note any changes to the national reporting system since the last report, including new case definitions.

Local council EHOs will also report, to the PHA, any venues which have been brought to their attention by members of the public e.g. group attending restaurant reporting several of the party becoming ill. Suspected cases are followed up by either EHOs or the PHA to obtain samples for testing. Depending on the results further investigation may follow.

If there is a suspected outbreak an incident management team may be established to investigate further which will normally involve health protection staff, EHOs, laboratory staff and the FSA. An outbreak report will be drawn up at the conclusion of the outbreak. This is shared with all members of the incident team.

In addition, where there are human cases in N. Ireland related to a national (or international) food-borne outbreak where the UK Health Security Agency (UKHSA) are taking the lead, staff from PHA would attend related incident management team meetings. This would also apply to outbreaks suspected to originate in the Republic of Ireland where the PHA would liaise with their counterparts in the Health Protection Surveillance Centre in Dublin.

35.2. Description of the types of outbreaks covered by the reporting[123]

In 2024 there were no food-borne outbreaks identified in N. Ireland that related to a local source. There were, however, some cases in N. Ireland related to national outbreaks where the response was led by UKHSA.

These included:

- STEC O145, a continuation of an outbreak from 2023.
- Hepatis A where berries were suspected to be the source. However, only one case from N. Ireland was identified in the 2024 year but the outbreak continued into 2025.

There were additional outbreak related cases; however, in these outbreaks the spread was due to person to person transmission rather than food borne.

[123] Outline any differences between the national system and the EU system. For example, if the national system does not record household outbreaks or differentiate between general and household outbreaks, mention this. Also, note in this section if outbreaks caused by toxins are not reported to the national system or if outbreaks caused by unknown agents are collected and reported to EFSA.

35.3. National evaluation of the reported outbreaks in the country[124]

Very limited numbers of probable or confirmed food related outbreaks identified within N. Ireland prevents analysis of any trends though there has been no evidence of increases in outbreaks related to food in recent years.

35.4. Descriptions of single outbreaks of special interest[125]

35.5. Control measures or other actions taken to improve the situation[126]

35.6. Any specific action decided in the Member State or suggested for the European Union as a whole on the basis of the recent/current situation[127]

35.7. Additional information[128]

[124] Describe trends in the number of outbreaks and human cases. Explain the relevance of different causative agents, food categories, and agent/food category combinations, as well as the relevance of different food production and preparation locations. Evaluate the severity of human cases and note whether the number of outbreaks and cases has increased, decreased, or remained stable over the years. Discuss possible reasons for observed trends, such as changes in food consumption or trade patterns. Characterize the severity of disease by reporting deaths, illnesses, and hospitalizations, and present trends over several years to evaluate the public health impact. Report the distribution of outbreaks by location of exposure and the relevance of different locations, including possible trends.

[125] Report foodborne outbreaks of special interest with relevant details. If a reported outbreak is part of a multi-country outbreak, describe and comment on this information.

[126] Describe control measures or other actions taken at the national level to control or prevent foodborne outbreaks during the reporting year. If available, include evaluations of the effectiveness of these measures.

[127] Provide any suggestions to the EU risk managers on proposed actions related to either specific outbreaks or reporting of data.

[128] Provide any other information relevant to foodborne outbreaks.

36. Institutions and laboratories involved in antimicrobial resistance (AMR) monitoring and reporting[129]

The Food Standard Agency-in Northern Ireland (FSA-NI) are responsible for sampling fresh retail meat. The Agri-food and Biosciences Institute (AFBI) is employed to carry out testing of fresh retail meats.

Department of Agriculture, Environment and Rural Affairs (DAERA) is the competent authority for AMR in animals and responsible for the programme of abattoir sampling of animals and sampling fresh meat at Border Control Points (BCP's).

The Agri-food and Biosciences Institute (AFBI) is employed to carry out testing on abattoir samples and fresh meat samples from BCPs submitted by DAERA NI.

The Department of Agriculture, Food and the Marine (DAFM), Republic of Ireland has been designated as the NI National Reference Laboratory for AMR.

[129] Short description of the institutions and laboratories involved in data collection and reporting.

37. General Antimicrobial Resistance Evaluation

37.1. Situation and epidemiological evolution (trends and sources) regarding AMR to critically important antimicrobials[130] (CIAs) over time until recent situation

Prior to 2021, Northern Ireland reported AMR Monitoring results as part of the harmonised UK data set. Since 2021 NI has been working towards building capacity to have full compliance with CID 200/1729 as required by Member States. Consequently, reporting fully on trends will not be available until subsequent years' data becomes available.

In 2024 DAERA has completed abattoir monitoring of broilers for a second year and it is possible to compare with the 2022 results. DAERA completed fresh meat sampling of chicken and turkey 3rd Country imports at BCPs throughout the 2024 calendar year for the first time. Since January 2025 DAERA are continuing sampling healthy fattening pigs at abattoirs and sampling 3rd country imports of fresh beef and pork fresh meat at Border Control Posts. The FSA in NI have completed fresh retail meats sampling throughout 2024.

Summary of 2024 Results.

Abattoir and NCP Sampling:

Within the abattoir survey we saw a decline in the commensal E. coli isolated from eligible samples from 2022 to 2024. A drop of 12% recovery of the E. coli. 5/170 (3%) isolates were resistant to ciprofloxacin. Microbiological resistance was not detected to colistin and gentamicin. None of the 170 isolates were resistant to cefotaxime or ceftazidime or meropenem. However, there was a rise of resistance within the commensal E. coli in 4 of the antibiotics; tetracycline, ampicillin, sulfamethoxazole and trimethoprim.

There was a rise of 1% in the CTX resistant E. coli. 2% of isolates contained CTX E. coli in 2022 which rose to 3% in 2024. In 2024 we isolated 10 ESBLs and 3 AmpCs.

- There was also a rise in Campylobacter species isolated from the samples in 2024 compared to 2022. In 2022 36% contained C. jejuni whereas in 2024 it was 66%. There was only a 4% rise in the number of C.coli isolated from samples in 2024: 30% in 2024 and 26%

[130] The CIAs depends on the bacterial species considered and the harmonised set of substances tested within the framework of the harmonised monitoring: for *Campylobacter* spp., macrolides (erythromycin) and fluoroquinolones (ciprofloxacin) and carbapenems (ertapenem) and for *Salmonella* and *E. coli*, 3rd and 4th generation cephalosporins (cefotaxime, ceftazidime), fluoroquinolones (ciprofloxacin), colistin (polymyxin), macrolides (azithromycin), glycylcyclines (tigecycline) and carbapenems (meropenem).

in 2022. In 2024 Campylobacter jejuni, 73/170 (43%) were resistance to fluoroquinolones (ciprofloxacin) and 50/170 (29%) were resistant to carbapenem (ertapenem).

This year we did our first Enterococcus survey, looking at Faecium and Faecalis. We got 83% recovery for faecium and 9% recovery for faecalis. E.faecium showed a 34% resistance to fluoroquinolones (ciprofloxacin) and a 28% resistance to macrolides (erythromycin).

NCP Salmonella samples rose from 18 in 2022 to 39 in 2024. 18% of 2024 NCP samples were resistant to tetracycline and 15% resistant to ampicillin. None of the isolates were resistant to cefotaxime, ceftazidime, meropenem or colistin.

BCP Sampling:

This is the 2nd year we have taken part in a BCP survey and was the first full calendar year of sampling so we are unable to compare to previous years. We were able to isolate 54 commensal E. coli from 75 samples. From these samples we identified 2 CTX resistant E. coli's that presented with AmpC phenotypes, tested positive for cefotaxime. Neither isolate showed resistance to colistin, gentamicin or meropenem. There was one salmonella species isolated, we speciated it as a group G species that was fully susceptible.

Retail Meat Survey:

A total of 73/600 (12%) E. coli were CTX resistant. Of those, 48/600 (8%) isolates were consistent with ESBL resistance and 23/600 (4%) were consistent with AmpC resistance. 2 E.coli isolates that showed "Other Phenotype" resistance, in that they were susceptible to cefoxitin, but showed no synergy with clavulanic acid.

37.2. Public health relevance of the findings on AMR in food-producing animals and related foodstuffs

AMR monitoring (based on CID (EU) 2020/1729) in the NI shows that there is a low level of resistance in food-borne pathogens to most of the HP-CIAs, except for resistance to fluoroquinolones in Campylobacter jejuni and Enterococcus faecium. C. jejuni in poultry showed a 43% resistance to fluoroquinolones while E.Faecium showed a 34% resistance. C.Jejuni also had a carbapenem antibiotic resistance of 29% in 2024.

All the major livestock sectors have committed to only using HP-CIAs as a last resort, where no alternatives are available and, wherever possible, guided by culture and sensitivity. UK Antimicrobial sales and usage data which includes NI sales and usage data, indicates a decline in HPCIA sales and usage as reported in UK- VARSS report 2023. Sales of highest priority critically important antibiotics (HP-C I A s) for food-producing animals remain very low at 0.11 mg/kg a reduction of 84% (0.6 mg/kg) since 2014. Overall, in 2023, HP-CIAs accounted for less than half a percent of the total antibiotic sales for food-producing animals. UK Veterinary Antibiotic Resistance and Sales Surveillance Report UK-VARSS 2023 is available at https://www.gov.uk/government/publications/veterinary-antimicrobial-resistance-and-sales-surveillance-2023

The decline in UK HPCIA sales specifically 64.7% reduction in fluoroquinolone sales (from 0.28 mg/PCU in 2011 to 0.10 mg/PCU in 2022) was reported with the final ESVAC report in 2023

DAERA, FSA-NI and AFBI are members of the DEFRA Antimicrobial Resistance Coordination Group (DARC). Every quarter any priority AMR detections, of importance for public health and animal health, detected in Northern Ireland are reported to DARC. These include MDR Salmonella spp, ESBLs and MRSA detections.

DAERA, AFBI and FSA-NI are also reporting members of the UK AMR Contingency Plan known as the Res-Alert system. This is activated if an identification of a resistant bacterial isolate of potential high risk to human or animal health. This is a UK One Health wide response, the process involves: alert, risk assessment, risk management and risk communication Res-Alert functions as an alarm system.

DAERA and DOH co-chair the NI One Health Strategic AMR and Healthcare Associated Infections (SAMRHAI) group which provides governance and oversight to NI AMR Implementation Plan which will deliver the NI commitments to UK Nation Action Plan 2024-2029 and focus on improving AMR stewardship. FSA-NI and AFBI along with other key NI OH AMR stakeholders are members of SAMRHAI group.

37.3. Recent actions taken to control AMR in food producing animals and foodstuffs

NI's first AMR action plan entitled 'Changing the Culture 2019-2024: One Health" has been completed in April 2024. This provided NI specific actions in conjunction with the UK 20-year vision and the first UK 5 year National Action Plan (NAP) 2019-2024, to bring the spread of antimicrobial resistance under control with a One Health approach. This included monitoring

and preventive actions against AMR in humans, animals, and the environment. NI has collaborated with One Health colleagues across the UK to develop the second UK National five-year AMR National Action plan (NAP) "Confronting Antimicrobial Resistance"2024-2029, which aims to take the UK closer to reaching its vision of containing and controlling AMR by 2040. The second UK AMR NAP was published in May 2024. In 2024 NI officials published a NI AMR Implementation Plan to take forward NI deliverables from the new UK NAP 2024-2029.

Within NI, as part of the UK, most of the major animal production sectors voluntarily share usage data for inclusion in the UK-VARSS report demonstrating their commitment to transparency and reduction of antibiotic usage and resistance. An AFBI research project STATUS completed in late 2024 provided for the first time a baseline of NI Food producing Animal Antibiotic Sales and NI Pig Sector Usage data. Both NI the sales and available usage followed similar declining trends to the UK VARSS UK Sales and Usage reporting. NI is working to improve the accuracy, availability, and coverage of antibiotic use data in the main livestock sectors, with a key priority being the electronic collation of data for ruminant species. This transparency will also provide insight into the different challenges faced by each of the animal production sectors, enabling them to implement tailored measures to achieve their sector-specific targets for reducing, replacing and refining antibiotic use in food-producing animals.

AFBI on behalf of DAERA provides annual data on trends and sources of AMR in animal diagnostic submissions to the UK-VARSS report.

There is a need, however, to fill knowledge gaps on risk pathways related to the food-borne AMR threat. This would enable the focusing of resource and effort on the antibiotic usages that are of highest risk and the targeting of interventions to those areas where they will have maximum impact in reducing development and spread of AMR. NI collaborated with the UK Pathogen Surveillance in Agriculture, Food and Environment (PATH-SAFE) Programme led by the FSA. PATH-SAFE developed an improved national surveillance programme for foodborne diseases and antimicrobial resistance using the latest DNA-sequencing technology and environmental sampling. Studies were completed in 2024 across 4 work streams and a project evaluation report was published: https://science.food.gov.uk/article/123918-path-safe-phase-1-evaluation-report

37.4. Any specific action decided in the Member State or suggestions to the European Union actions to be taken against foodborne AMR threat

The UK's 20-year Vision and five-year National Action Plan for antimicrobial resistance is available at https://www.gov.uk/government/publications/uk-20-year-vision-for-antimicrobial-resistance

The NI AMR Action Plan entitled 'Changing the Culture 2019-2024: One Health" can be found at Five-year action plan for tackling antimicrobial resistance is available at https://www.daera-ni.gov.uk/publications/changing-culture-2019-2024-one-health

The UK second five-year AMR National Action plan (NAP) "Confronting Antimicrobial Resistance", is available at https://www.gov.uk/government/publications/uk-5-year-action-plan-for-antimicrobial-resistance-2024-to-2029

37.5. Additional information

N/A

38. Analytical methods used for the isolation and confirmation[131] of bacterial agents per sample type

A.1. Meat samples

A.1.1. ESBL- or AmpC- or CP-producing *E. coli*

A.1.1. The protocol issued by the EU Reference Laboratory in Denmark was used for the specific monitoring of ESBL/ AmpC/ carbapenemase-producing E. coli. In addition, two selective agar for the detection of carbapenemase producing E. coli were used, chromID® CARBA and chromID® OXA-48. These agars for selective culture of carbapenemase-producing E. coli were used according to the protocol issued by the EU Reference Laboratory.

A.1.2. CP-producing *E. coli*

A.1.2. The protocol issued by the EU Reference Laboratory in Denmark was used for the specific monitoring of carbapenemase-producing E. coli. In addition, two selective agar for the detection of carbapenemase producing E. coli were used, chromID® CARBA and chromID® OXA-48. These agars for selective culture of carbapenemase-producing E. coli were used according to the protocol issued by the EU Reference Laboratory.

A.1.3. Salmonella spp.

A.1.3. Salmonella isolates were examined biochemically and serologically to confirm identification to genus level. Isolates were serotyped using slide agglutination tests, to investigate the presence of the recognised somatic and flagellar antigens, using specific antisera. Additional biochemical tests were performed where required for certain serovars. Serovars were determined according to the Kauffman-White-Le Minor scheme.

A.1.4. Commensal indicator *E. coli*

A.1.4. Indicator E. coli were isolated from fresh meat samples using MacConkey agar. An isolate was randomly selected and sub-cultured for further testing. Standard biochemical tests were used to identify E. coli.

[131] Analytical method used for detection and confirmation: according to the legislation, the protocols developed by the EURL-AR should be used and reported here. Report the methods used for the detection and confirmation of *Salmonella*, *Campylobacter*, *E. coli* and any other bacteria included in the monitoring. For the specific monitoring on carbapenemase producers, the selective media used (commercial plates, in-house media) should also be reported here. In general, any variation from the EURL-AR protocols should be stated here.

A.2. Caecal samples

A.1.5. Campylobacter jejuni/coli

MCCDA & Butzler agar was used for isolation of Campylobacter spp without pre-enrichment. Validated PCR by EURL-AR was used to confirm identification at the species level.

A.1.6. *Salmonella* spp.

Salmonella isolates were examined biochemically and serologically to confirm identification to genus level. Isolates were serotyped using slide agglutination tests, to investigate the presence of the recognised somatic and flagellar antigens, using specific antisera. Additional biochemical tests were performed where required for certain serovars. Serovars were determined according to the Kauffman-White-Le Minor scheme.

A.1.7. Indicator commensal *E. coli*

Indicator E. coli were isolated from caecal contents using MacConkey agar. An isolate was randomly selected and sub-cultured for further testing. Standard biochemical tests were used to identify E. coli.

A.1.8. ESBL- or AmpC- or CP-producing *E. coli*

The protocol issued by the EU Reference Laboratory in Denmark was used for the specific monitoring of ESBL/ AmpC/ carbapenemase-producing E. coli. In addition, two selective agar for the detection of carbapenemase producing E. coli were used, chromID® CARBA and chromID® OXA-48. These agars for selective culture of carbapenemase-producing E. coli were used according to the protocol issued by the EU Reference Laboratory.

A.1.9. CP-producing *E. coli*

The protocol issued by the EU Reference Laboratory in Denmark was used for the specific monitoring of carbapenemase-producing E. coli. In addition, two selective agar for the detection of carbapenemase producing E. coli were used, chromID® CARBA and chromID® OXA-48. These agars for selective culture of carbapenemase-producing E. coli were used according to the protocol issued by the EU Reference Laboratory.

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A.1.10. Enterococcus Faecium & Enterococcus Faecalis

Slanetz and Bartley agar was used for isolation of Enterococcus spp. Validated PCR by EURL-AR was used to confirm identification at the species level.

39. Laboratory methodology used for the detection of AMR[132]

39.1. *C. jejuni/coli*

Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 3 of Decision 2020/1729/EU (the ECOFF applied is stated in brackets): erythromycin (>4 for jejuni, >8 for coli), ertapenem (NA), ciprofloxacin (>0.5), chloramphenicol (>16), gentamicin (>2), tetracycline (>1 for jejuni & >2 coli).

39.2. *Salmonella* spp.

Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 2 (the ECOFF applied is stated in brackets): amikacin (>4) ampicillin (>8), azithromycin (NA), cefotaxime (>0.5), ceftazidime (>2.), chloramphenicol (>16), ciprofloxacin (>0.06), colistin (NA), gentamicin (>2), meropenem (>0.125), nalidixic acid (>8), sulfamethoxazole (NA), tetracycline (>8), tigecycline (NA), trimethoprim (>2).

39.3. Indicator commensal *E. coli*

Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 2 (the ECOFF applied is stated in brackets): amikacin (>8) ampicillin (>8), azithromycin (NA), cefotaxime (>0.25), ceftazidime (>0.5), chloramphenicol (>16), ciprofloxacin (>0.06), colistin (>2), gentamicin (>2), meropenem (>0.125), nalidixic acid (>8), sulfamethoxazole (>64), tetracycline (>8), tigecycline (>0.5), trimethoprim (>2).

39.4. ESBL- or AmpC- or CP-producing *E. coli*

Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 2 (the ECOFF applied is stated in brackets): amikacin (>8) ampicillin (>8), azithromycin (NA), cefotaxime (>0.25), ceftazidime (>0.5), chloramphenicol (>16), ciprofloxacin (>0.06), colistin (>2), gentamicin (>2), meropenem (>0.125), nalidixic acid (>8),

[132] Antimicrobials included in monitoring and cut-off values used in testing can be reported. According to the legislation, the protocols developed by the EURL-AR should be used and reported here.

sulfamethoxazole (>64), tetracycline (>8), tigecycline (>0.5), trimethoprim (>2). Further testing of the supplementary panel of antimicrobials (in accordance with Table 5 in Decision 2020/1729/EU) was then performed on isolates resistant to cefotaxime or ceftazidime or meropenem using cefepime (>0.125), cefotaxime (>0.25), cefotaxime + clavulanate (>0.25), cefoxitin (>8), ceftazidime (>0.5), ceftazidime plus clavulanate (>0.5), ertapenem (NA), imipenem (>0.5), meropenem (>0.125) and temocillin (>16).

39.5. CP-producing *E. coli*

Not required as none detected

39.6. Enterococcus Faecium & Enterococcus Faecalis

Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 3 of Decision 2020/1729/EU (the ECOFF applied is stated in brackets): ampicillin (>4 for both) chloramphenicol (>32) ciprofloxacin (>4) daptomycin (>4 for faecalis >8 for faecium) erythromycin (>4), gentamicin (>64 faecalis >32 faecium) linezolid (>4) quinupristin/dalfopristin (NA) teicoplanin (>2) tetracycline (>4) tigecycline (>0.25) vancomycin (>4)

40. Library preparation used[133]

40.1. *C. jejuni/coli*

Not applicable

40.2. *Salmonella* spp.

Not Applicable

40.3. Indicator commensal *E. coli*

Not Applicable

40.4. ESBL- or AmpC- or CP-producing *E. coli*

Not Applicable

40.5. CP-producing *E. coli*

WGS library preparation was performed using the Illumina DNA Prep Library Preparation Kit (ref. guide: 1000000025416 v11) in conjunction with the Illumina Nextera DNA CD Index Kit. Downstream sequencing of libraries was performed on the Illumina MiSeq using a 2 x 250 bp paired-end approach.

[133] The library preparation used is mandatory when whole genome sequencing (WGS) data are reported. Member States should report the library layout: whether to expect SINGLE or PAIRED end reads.

41. Version of the predictive tool[134]

41.1. *C. jejuni/coli*

Not applicable

41.2. *Salmonella* spp.

Not applicable

41.3. Indicator commensal *E. coli*

Not Applicable

41.4. ESBL- or AmpC- or CP-producing *E. coli*

41.5. AMR profile prediction from high-quality WGS sequences was carried out in silico using the Resfinder v4.5.0 tool. CP-producing E. coli CP-producing *E. coli*

[134] The version of the predictive tool is mandatory information when WGS data are reported. It allows Member States to report the version of the predictive tool used to identify the resistance genes responsible of the extended-spectrum beta-lactamase (ESBL)-, AmpC- or carbapenemase phenotype, when the analysis was performed.

42. General Description of the AMR-Monitoring in Fresh Meat at Retail[135]

42.1. General description of the sampling design and strategy [136]

600 fresh broiler (chicken) and turkey meat samples available for NI retail sale were sampled and tested for Extended-spectrum beta-lactamases (ESBLs), AmpC beta-lactamases, and carbapenemases (CP) enzyme producing *E. coli* in accordance with Decision 2020/1729/EU and EU guidance protocols. The sampling design was based on a randomised monthly sampling schedule, with sampling spread as evenly as possible from January to December 2024 on nominated days by trained staff from HallMark Veterinary & Compliance Services.

The monitoring, using selective agars, for carbapenemase-producing *E. coli* and OXA-carbapenemase producing *E. coli,* was also performed. Broth microdilution (MIC determination) was performed in accordance with Decision 2020/1729/EU. The following antimicrobials were tested as specified in Table 2 (the ECOFF applied is stated in brackets): amikacin (>8) ampicillin (>8), azithromycin (>16), cefotaxime (>0.25), ceftazidime (>1), chloramphenicol (>16), ciprofloxacin (>0.06), colistin (>2), gentamicin (>2), meropenem (>0.06), nalidixic acid (>8), sulfamethoxazole (>64), tetracycline (>8), tigecycline (>0.5), trimethoprim (>2). Further testing of the supplementary panel of antimicrobials (in accordance with Table 5 in Decision 2020/1729/EU) was then performed on isolates resistant to cefotaxime or ceftazidime or meropenem using cefepime (>0.125), cefotaxime (>0.25), cefotaxime + clavulanate (>0.25), cefoxitin (>8), ceftazidime (>1), ceftazidime plus clavulanate (>1), ertapenem (0.03), imipenem (>0.5), meropenem (>0.06) and temocillin (>16).

Additionally, the 73 ESBL or Amp C enzyme producing *E. coli* isolates from fresh retail meats had WGS and AMR Bioinformatic Analysis performed in accordance with Decision 2020/1729/EU and EURL WGS-AMR protocols, including DNA sequence upload to the European Nucleotide Archive (ENA) browser: PRJEB87324. Bacterial isolation, DNA preparation and DNA quality and quantity assessment, library preparation, library quality and quantity assessment and sequencing, and bioinformatics analysis were all performed in accordance with Decision 2020/1729/EU, EURL recommendations and Illumina website guidelines. DNA Library preparation used Illumina DNA Prep Library Prep Reference Guide

[135] Each category of meat (broiler meat, turkey meat, pig meat, bovine meat) should be reported under each heading.

[136] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

(1000000025416) with an Illumina MiSeq. Sequencing was performed using a paired-end approach with a read length of 2 x 250 bp. AMR gene and point mutation prediction was performed in accordance with Decision 2020/1729/EU and EURL recommendations using ResFinder tool v4.2. with pointfinderversion 4.0.1.

42.2. Stratification procedure of the meat category

In total 600 fresh (not frozen) chicken & turkey samples (300 chicken & 300 turkey) in accordance with Decision 2020/1729/EU and EU guidance protocols were sampled and tested. The sampling design was based on a randomised monthly sampling schedule, with sampling spread as evenly as possible from January to December 2024 on nominated days by trained staff from HallMark Veterinary & Compliance Services.

42.3. Randomisation procedures in the meat category including numbers of samples planed and taken per bacterial agent

The sampling design was based on a randomised monthly sampling schedule, with the sampling of 600 fresh retail samples (300 chicken & 300 turkey) spread as evenly as possible from January to December 2024 on nominated days by trained staff from HallMark Veterinary & Compliance Services in accordance with Decision 2020/1729/EU and EU guidance protocols.

42.3.1. ESBL- or AmpC- or CP-producing *E. coli*

600 fresh broiler (chicken) and turkey meat samples available for NI retail sale were sampled and tested for Extended-spectrum beta-lactamases (ESBLs), AmpC beta-lactamases, and carbapenemases (CP) enzyme producing E. coli in accordance with Decision 2020/1729/EU and EU guidance protocols.

42.3.2. CP-producing *E. coli*

600 fresh broiler (chicken) and turkey meat samples available for NI retail sale were sampled and tested for Extended-spectrum beta-lactamases (ESBLs), AmpC beta-lactamases, and carbapenemases (CP) enzyme producing E. coli in accordance with Decision 2020/1729/EU and EU guidance protocols.

42.4. Results of the monitoring[137]

A total of 73/600 (12%) E. coli were CTX resistant. Of those, 48/600 (8%) isolates were consistent with ESBL resistance and 23/600 (4%) were consistent with AmpC resistance. 2 E. coli isolates that showed "Other Phenotype" resistance, in that they were susceptible to cefoxitin but showed no synergy with clavulanic acid. No isolates with resistance to last line antibiotics, including colistin and carbapenems were obtained.

42.4.1. ESBL- or AmpC- or CP-producing *E. coli*

48 isolates from retail meats had confirmed EBSL resistance (to cephalosporin) and 23 isolates had AmpC resistance (additional cefoxtitin resistance. 2 E. coli isolates showed "Other Phenotype" resistance, in that they were susceptible to cefoxitin, but showed no synergy with clavulanic acid. No isolates with resistance to last line antibiotics, including colistin and carbapenems were obtained.

42.4.2. CP-producing *E. coli*

No CP-producing E. coli were detected from 600 fresh retail meats.

42.5. Additional information

N/A

[137] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

43. General Description of the AMR-Monitoring in Fresh Meat at Border Control Posts[138]

43.1. General description of the sampling design and strategy[139]

Broiler and Turkey fresh meat imports from Third Countries (including GB) were sampled for Salmonella Spp., Indicator commensal and ESBL/ AmpC/ carbapenemase –producing Escherichia coli. Imported meat samples include fresh or frozen meat, not processed. Sampling was in accordance with Implementing Decision (EU) 2020/1729.

'Fresh' includes any meat that has not undergone any preserving process other than chilling, freezing or quick freezing.

The BCP sampling Plan aimed that the consignments to be sampled on any given day were randomly selected. Sample collection was evenly distributed throughout 2024. The sampling design was based on a randomised monthly sampling schedule, with sampling spread as evenly as possible throughout 2024 on nominated days and carried out by trained portal DAERA staff. The sampling plan used TRACES data from the previous year to ensure for broiler meat that up to 60 consignments arriving per BCP and origin: at least 1 consignment randomly selected sampled per year and above 60 consignments imported: an average of around 3% of consignments randomly selected sampled per year and for turkey meat up to 10 consignments arriving per BCP and origin: at least 1 consignment randomly selected sampled and above 10 consignments imported an average of around 15% of consignments randomly selected sampled per year. Meat samples were randomly selected from a consignment, with 3 samples taken per consignment.

43.2. Stratification procedure of the meat category

Stratification for BCP sampling was performed in accordance with Decision 2020/1729/EU and EFSA guidelines.

[138] The reason for not reporting AMR data for a specific animal population or meat category included in the mandatory monitoring, should be stated in the text form. For example, if no consignments of fresh meat of a specific animal category were not received by the Member State. Each category of meat (broiler meat, turkey meat, pig meat, bovine meat) should be reported under each heading.

[139] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

Broiler and Turkey meat imports from Third Countries (including GB) samples were collected from all NI BCPs designated for fresh meat receiving imports in the previous year. The number of consignments selected per BCP was in proportion to number consignments imported at that BCP in the previous year as per EFSA guidelines.

43.3. Randomisation procedures in the meat category including numbers of samples planed and taken per bacterial agent

43.3.1. *Salmonella* spp.

No randomisation required as all Salmonella isolates from BCP were subject to MIC testing.

43.3.2. Indicator commensal *E. coli*

No randomisation required as all indicator commensal E.coli isolates from BCP were subject to MIC testing.

43.3.3. ESBL- or AmpC- or CP-producing *E. coli*

No randomisation required as all BCP samples were tested for ESBL or AmpC producing E.coli E.coli All ESBL or AmpC producing E.coli isolates from BCP were subject to MIC testing

43.3.4. CP-producing *E. coli*

No randomisation required as all BCP samples were tested for CP-producing E.coli.

43.4. Results of the monitoring[140]

43.4.1. *Salmonella* spp.

For 2024 there was 1 sample that tested positive for Salmonella out of 75. This was salmonella Group G and was not resistant to cefotaxime, ceftazidime, meropenem or colistin.

43.4.2. Indicator commensal *E. coli*

54 out of 75 samples tested positive for indicator commensal E.coli (72%)

19/75 were resistant to Ampicillin (25%)

[140] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

10/75 were resistant to tetracycline (13%)

16/75 were resistant to Sulfamethoxazole (21%)

43.4.3. ESBL- or AmpC- or CP-producing *E. coli*

2 out of 75 samples tested positive for cefotaxime resistance and had confirmed AmpC resistance. Neither isolate showed resistance to colistin, gentamicin or meropenem.

43.4.4. CP-producing *E. coli*

No CP-producing E. coli were detected

43.5. Additional information

44. General Description of the AMR-Monitoring of Laying-hen Flocks at Farm

44.1. General description of the sampling design and strategy[141]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EC) No. 517/2011) and in the Northern Ireland Salmonella National Control Programme (NCP) for laying hens (Gallus gallus). All consignments of day-old chicks are sampled on arrival. This sample is taken in accord with the requirements of the Salmonella commercial laying hen NCP. Mandatory sampling is required on the day of arrival – samples must be taken from each flock within 72 hours of hatching. Rearing period samples are taken two weeks before moving to laying phase/ laying unit. Laying flocks are sampled between 22-26 weeks of age, and then every 15 weeks during the production period. This sample is taken in accordance with the requirements of the Salmonella commercial laying hen NCP.

In addition to the sampling above, Official Control Samples are collected annually for one flock on all holdings with more than 1,000 birds.

All Salmonella isolates from NCP Laying Hen Flock sampling were subject to MIC testing.

44.2. Stratification procedure of the animal population

All Salmonella isolates from NCP Laying Hen Flock sampling were subject to MIC testing

[141] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

44.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

44.3.1. *Salmonella* spp.

All Salmonella isolates from NCP Laying Hen Flock sampling were subject to MIC testing.

44.4. Results of the monitoring[142]

44.4.1. *Salmonella* spp.

For 2024 there were 3 samples that tested positive for Salmonella under the NCP Laying Hen framework.

None of these were resistant to cefotaxime, ceftazidime, meropenem or colistin.

None were resistant to Ampicillin, Tetracycline, Trimethoprim

2/3 (67%) were resistant to Sulfamethoxazole

44.5. Additional information

45. General Description of the AMR-Monitoring of Broiler Flocks at Farm

45.1. General description of the sampling design and strategy[143]

Salmonella Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EU) No. 200/2012) and in the Northern Ireland Salmonella National Control Programme (NCP) for chickens producing meat for human consumption (broilers). According to the requirements of the Salmonella National Control Programme, mandatory sampling is required within 3 weeks of the birds being sent to slaughter. Routine Official Control Samples are collected once annually from 10% of holdings with more than 5,000 birds.

[142] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

[143] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

45.2. Stratification procedure of the animal population

All Salmonella isolates from NCP Broiler Flock sampling were subject to MIC testing.

45.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

45.3.1. *Salmonella* spp.

Randomisation was not required as there were only 35 isolates that were eligible for MIC testing. All Salmonella isolates from NCP Broiler Flock sampling were subject to MIC testing

45.4. Results of the monitoring[144]

45.4.1. *Salmonella* spp.

For 2024 there were 35 samples that tested positive for Salmonella under the NCP Broiler Flock sampling framework.

None of these were resistant to cefotaxime, ceftazidime, meropenem or colistin.

5/35 (14%) were resistant to Ampicillin

9/35 (26%) were resistant to Sulfamethoxazole

6/35 (17%) were resistant to tetracycline

45.5. Additional information

46. General Description of the AMR-Monitoring of Turkey Flocks at Farm

46.1. General description of the sampling design and strategy[145]

Sampling is carried out as specified in EU legislation (Regulation (EC) No. 2160/2003 and Regulation (EU) No. 1190/2012) and in Northern Ireland Salmonella National Control Programme (NCP) for fattening turkey flocks producing meat for human consumption. According to the requirements of the Salmonella National Control Programme, mandatory

[144] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

[145] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

sampling is required within 3 weeks of the birds being sent to slaughter, unless due to be slaughtered at more than 100 days of age or for organically reared birds produced according to Commission Regulation (EC) 889/2008 when sampling is required within 6 weeks of slaughter. The NCP sample must consist of a minimum of two pairs of boot swabs or one pair of boot swabs and one 900 square cm dust swab taken so as to be representative of the whole area in the house to which the birds have access. In flocks of less than 100 turkeys, where it is not possible to take boot swabs, four hand-held 900 square cm dust swabs may be used. Routine Official Control Samples are collected once annually from 10% of holdings with more than 500 birds.

46.2. Stratification procedure of the animal population

All Salmonella isolates from NCP Fattening Turkey Flock sampling were subject to MIC testing.

46.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

46.3.1. *Salmonella* spp.

Randomisation was not required as there was only one isolate that were eligible for MIC testing. All Salmonella isolates from NCP Broiler Flock sampling were subject to MIC testing

46.4. Results of the monitoring[146]

46.4.1. *Salmonella* spp.

The one isolate was not resistant to cefotaxime, ceftazidime, meropenem or colistin but was resistant to Ampicillin.

46.5. Additional information

[146] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

47. General Description of the AMR-Monitoring of Broilers at Slaughterhouse

47.1. General description of the sampling design and strategy[147]

Caecal contents from healthy broilers at slaughter were sampled for Indicator Commensal and ESBL/ AmpC/ carbapenemase –producing Escherichia coli, Campylobacter jejuni & Campylobacter coli, Enterococcus Faecium & Enterococcus Faecalis in accordance with the specific monitoring described in Decision 2020/1729/EU and the guidance and protocols produced by the EU Reference Laboratory for AMR in Denmark.

The sampling design was based on a randomised monthly production day sampling schedule with sampling spread evenly throughout the 12-month period. The sampling plan aimed to take caecal samples from a single randomised flock (epidemiological unit) on the nominated day by trained DAERA meat inspection staff. A caecal sample was taken from each of ten carcases randomly selected per each selected flock.

47.2. Stratification procedure of the animal population

Stratification for slaughter was performed in accordance with Decision 2020/1729/EU and EFSA guidelines. Slaughter samples were collected from NI broiler slaughter plants processing more than 60% of NI domestic broiler throughput in the previous year.

47.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

47.3.1. *C. coli* and *C. jejuni*

Caecal contents from broilers were sampled for Campylobacter jejuni & Campylobacter coli in accordance with Decision 2020/1729/EU. From the 390 samples, we isolated 318 Camplylobacter isolates.

220 were C. jejuni (70%) and 98 were C.coli (30%). Randomisation was performed in accordance with Decision 2020/1729/EU and EFSA guidelines on the 220 C.jejuni to give 170 unique sample ID. And all the 98 C.coli were MIC tested.

47.3.2. Indicator commensal *E. coli*

[147] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

Randomisation was performed in accordance with Decision 2020/1729/EU and EFSA guidelines. 332 isolates were recovered from 390 caeca. In accordance with EFSA's guidelines, each eligible broiler flock (the "epidemiological unit") was eligible to contribute one randomly selected E. coli isolate and thereby avoid clustering.

47.3.3. ESBL- or AmpC- or CP-producing *E. coli*

Randomisation was not performed in accordance with Decision 2020/1729/EU and EFSA guidelines. As only 13 isolates were recovered from 390 caecal samples. In accordance with EFSA's guidelines, each eligible broiler (the "epidemiological unit") was eligible to contribute one randomly selected E. coli isolate and thereby avoid clustering.

47.3.4. CP-producing *E. coli*

None of the caecal samples yielded growth of E.coli on the two agars selective for carbapenemase producing organisms.

47.4. Results of the monitoring[148]

47.4.1. *C. coli*

23/98 (23%) C.coli isolates were ciprofloxacin resistant,

13/98 (13%) C.coli isolates were ertapenem resistant

1/98 (1%) C.coli isolates were erythromycin resistant (not the same sample as the C.jejuni isolate with Erythromycin resistance)

63/98 (64%) C.coli isolates were resistant to tetracycline

47.4.2. *C. jejuni*

73/170 (43%) C.jejuni isolates were ciprofloxacin resistant

50/170 (29%) C.jejuni isolates were ertapenem resistant

1/170 (0.6%) C.jejuni isolates were erythromycin resistant (not the same sample as the C.coli isolate with Erythromycin resistance)

137/170 (81%) C.jejuni isolates were resistant to tetracycline.

[148] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

47.4.3. Indicator commensal *E. coli*

We detected 332 commensal E.coli out of the 390 broiler caeca we tested.

After randomisation we selected 170 to be MIC tested.

Microbiological resistance was not detected to colistin and gentamicin. None of the 170 isolates were resistant to cefotaxime or ceftazidime or meropenem5/170 (3%) isolates were resistant to ciprofloxacin

40/170 (23%) isolates were resistant to tetracycline

57/170 (34%) isolates were resistant to ampicillin

5/170 (3%) isolates were resistant to chloramphenicol

5/170 (3%) isolates were resistant to nalidixic acid

47/170 (28%) isolates were resistant to sulfamethoxazole

30/170 (18%) isolates were resistant to trimethoprim

47.4.4. ESBL- or AmpC- or CP-producing *E. coli*

We did isolate 13 organisms that were Cefotaxime (CTX) resistant. These 13 isolates were put through both EUVSEC3 and EUVSEC2 sensititre plates.

10 were consistent with ESBL resistance and 3 were consistent with AmpC resistance.

47.4.5. CP-producing *E. coli*

None of the caecal samples yielded growth of E.coli on the two agars selective for carbapenemase producing organisms.

47.4.6. Enterococcus Spp

Caecal contents from broilers were sampled for Enterococcus faecium & Enterococcus faecalis in accordance with Decision 2020/1729/EU.

From the 390 samples, we isolated 356 Enterococci isolates.

322 were E.faecium (90%) and 34 were E.faecalis (10%).

Randomisation was performed in accordance with Decision 2020/1729/EU and EFSA guidelines on the 322 Enterococcus faecium to give 170 unique sample ID. And all the Enterococcus faecalis were MIC tested.

From the 356 Enterococci isolated we investigated 170 out of 322 E.faecium and 34 E.faecalis for AMR.

58/170 (34%) E.faecium and 1/34 (3%) E.faecalis isolates were ciprofloxacin resistant,

47/170 (28%) E.faecium and 12/34 (35%) E.faecalis isolates were erythromycin resistant

76/170 (45%) E.faecium and 27/34 (79%) E.faecalis isolates were resistant to tetracycline.

9/170 (5%) E.faecium and 4/34 (12%) E.faecalis isolates were resistant to Vancomycin.

47.5. Additional information

48. General Description of the AMR-Monitoring of Turkeys at Slaughterhouse[149]

48.1. General description of the sampling design and strategy[150]

AMR monitoring in Turkeys at the Slaughterhouse was not carried out in 2024 as NI domestic Turkey production was well below the required 10,000 tonnes in the previous year.

48.2. Stratification procedure of the animal population

48.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

48.3.1. *C. coli* and *C. jejuni*

48.3.2. Indicator commensal *E. coli*

48.3.3. ESBL- or AmpC- or CP-producing *E. coli*

48.3.4. CP-producing *E. coli*

[149] The reason for not reporting AMR data for a specific animal population or meat category included in the mandatory monitoring, should be stated in the text form. For example, if the production of meat from turkey or meat from cattle under one year of age in the Member State is less than 10,000 tonnes per year and therefore monitoring of these animal categories is not mandatory.

[150] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

48.4. Results of the monitoring[151]

48.4.1. *C. coli*

48.4.2. *C. jejuni*

48.4.3. Indicator commensal *E. coli*

48.4.4. ESBL- or AmpC- or CP-producing *E. coli*

48.4.5. CP-producing *E. coli*

48.5. Additional information

[151] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

49. General Description of the AMR-Monitoring of Fattening Pigs at Slaughterhouse

49.1. General description of the sampling design and strategy[152]

NI AMR Monitoring of fattening pigs at slaughter houses was not carried out in 2024 as this was not a requirement of CID 202O/17129 EU for 2024. This sampling currently is ongoing in 2025.

49.2. Stratification procedure of the animal population

49.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

49.3.1. *Salmonella* spp.

49.3.2. *C. coli* and *C. jejuni*

49.3.3. Indicator commensal *E. coli*

49.3.4. ESBL- or AmpC- or CP-producing *E. coli*

49.3.5. CP-producing *E. coli*

49.4. Results of the monitoring[153]

49.4.1. *Salmonella* spp.

49.4.2. *C. coli*

49.4.3. *C. jejuni*

49.4.4. Indicator commensal *E. coli*

49.4.5. ESBL- or AmpC- or CP-producing *E. coli*

[152] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

[153] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.

49.4.6. CP-producing *E. coli*

49.5. Additional information

50. General Description of the AMR-Monitoring of Bovines under 1 year age at Slaughterhouse[154]

50.1. General description of the sampling design and strategy[155]

NI AMR Monitoring bovines under 1 year at slaughterhouses was not carried out in 2024.

Annual NI Domestic production of meat from bovines less than 1year old is less than the required 10,000 tonnes.

50.2. Stratification procedure of the animal population

50.3. Randomisation procedures in the animal population including numbers of samples planed and taken per bacterial agent

50.3.1. *Salmonella* spp.

50.3.2. *C. coli* and *C. jejuni*

50.3.3. Indicator commensal *E. coli*

50.3.4. ESBL- or AmpC- or CP-producing *E. coli*

[154] The reason for not reporting AMR data for a specific animal population or meat category included in the mandatory monitoring, should be stated in the text form. For example, if the production of meat from turkey or meat from cattle under one year of age in the Member State is less than 10,000 tonnes per year and therefore monitoring of these animal categories is not mandatory.

[155] Method of sampling (description of sampling technique: stage of sampling, type of sample, sampler), Frequency of sampling, Procedure of selection of isolates for susceptibility testing or whole genome testing. Method used for collecting and collating data at the national level.

50.3.5. CP-producing *E. coli*

50.4. Results of the monitoring[156]

50.4.1. *Salmonella* spp.

50.4.2. *C. coli*

50.4.3. *C. jejuni*

50.4.4. Indicator commensal *E. coli*

50.4.5. ESBL- or AmpC- or CP-producing *E. coli*

50.4.6. CP-producing *E. coli*

50.5. Additional information

[156] A short assessment of the reported results can be provided in the narrative part. This analysis may cover a comparison of the current results with those from previous years in order to identify any trends.