Salmonella Poultry Active Surveillance Programme

**Background**

Numerous strains of Salmonella exist in poultry worldwide. Important poultry adapted strains include *S.* Pullorum(which causes pullorum disease) and *S.* Gallinarum (which causes fowl typhoid). Both of these poultry adapted strains can cause high mortality in young birds, and *S.* Gallinarum can also cause diarrhoea and liver lesions in older birds. **Both *S.* Pullorum and S*.* Gallinarum are absent from Ireland.**

Many other strains of salmonella, which are not poultry adapted, exist worldwide. These typically do not cause clinical signs, mortality or economic losses at farm level. However, since salmonella species are a common cause of food borne illness, these non-poultry adapted salmonella strains are of substantial public health significance. Prevalence of these strains in Ireland is low, but they do occasionally occur in a small number of flocks, and are generally detected during routine sampling from clinically normal birds.

**Legislative basis for sampling**

Different categories of poultry are covered by different pieces of legislation for the purposes of sampling for *Salmonella.* The legislation can be summarised as follows:

|  |  |  |
| --- | --- | --- |
| **Category of poultry** | **EU legislation** | **National legislation** |
| Broiler Breeders (Parents & Grandparents) | Commission Regulation (EU) No 200/2010 | SI 305 of 2024 |
| Commercial broilers | Commission Regulation (EU) No 200/2012 | SI 305 of 2024 |
| Turkey breeders | Commission Regulation (EU) No 1190/2012 | SI 305 of 2024 |
| Turkey fatteners | Commission Regulation (EU) No 1190/2012 | SI 305 of 2024 |
| Table egg layer rearing pullets | Commission Regulation (EU) No 517/2011 | SI 305 of 2024 |
| Table egg layers | Commission Regulation (EU) No 517/2011 | SI 305 of 2024 |

**Official sampling**

Official surveillance and monitoring for *Salmonella* spp. within the national poultry flock is performed on a routine basis by DAFM. The organisation of this official sampling is defined by poultry type and genetic level of the flock.

Feed mills manufacturing poultry feed are also subject to official DAFM sampling for *Salmonella* spp. on a regular basis.

Official samples are taken at holdings according to procedures laid down in EU legislation, and analysed at Laboratories approved by DAFM for the testing of samples under regulations on the control of salmonella in poultry flocks.

**Official sampling frequency depends on the bird category:**

1. Broilers: Each year official sampling is carried out by authorised inspectors from the Regional Veterinary Offices (RVOs). The sampling programme must include at least one flock of broilers on 10% of the holdings with more than 5,000 birds, with flocks selected on the basis of a risk assessment. Sampling takes place within the 3 week period before the birds are moved to the slaughterhouse.

2. Broiler breeder: 3 times a year in all flocks with >250 birds.

(a) within four weeks following moving to laying phase or laying unit;

(b) towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle;

(c) at any time during the production cycle which is sufficiently distant in time from the sampling referred to in points (a) and (b).

3. Turkey breeders: Once a year in all flocks with at least 250 adult breeding turkeys between 30 and 45 weeks of age and all holdings with elite, great grandparents and grand parent breeding turkeys.

4. Turkey fatteners: Once a year at least in one flock on 10 % of the holdings with at least 500 fattening turkeys.

5. Table Egg Layer Rearing Flock: No official sampling is performed

6. Table Egg **Gallus Gallus** Layers: In at least one flock per year per holding comprising at least 1000 birds.

**2019 Summary of Official DAFM Salmonella samples by Poultry category:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Type of Bird**  | **No of Samples** **(Boot swab & Dust)**  | **Positives**  | **Negatives**  |
| **2019** | Broiler Breeders\*  | 921 | 4 | 917 |
| Broilers  | 111 | 0 | 111 |
| Layers \*\* | 474 | 5 | 469 |
| Turkey Breeders  | 12 | 0 | 12 |
| Turkey Fatteners \*\*\* | 59 | 3 | 56 |

\*There are 10 further samples from Layer breeder flocks (4) and Grandparent broiler flocks (6) tested, all of which had negative results. The 4 isolates were *Salmonella* Typhimurium obtained from just two broiler breeder flocks prior to lay.

\*\* The five isolates were obtained from two layer flocks, one of which was a small layer flock with *Salmonella* Typhimurium and another flock with *S*. Schwarzengrund.

\*\*\* The three turkey isolates were all *Salmonella* Derby from two flocks.

**2020 Summary of Official DAFM Salmonella samples by Poultry category:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Type of Bird**  | **No of Samples** **(Boot swab & Dust)**  | **Positives**  | **Negatives**  |
| **2020** | Broiler Breeders  | 806 | 0 | 806 |
| Broilers  | 110 | 0 | 110 |
| Layers \* | 446 | 1 | 445 |
| Turkey Breeders  | 8 | 0 | 8 |
| Turkey Fatteners  | 30 | 0 | 30 |

\*S. Kentucky detected in one layer flock

**2021 Summary of Official DAFM Salmonella samples by Poultry category:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Type of Bird**  | **No of Samples** **(Boot swab & Dust)**  | **Positives**  | **Negatives**  |
| **2021** | Broiler Breeders\* | 774 | 2\* | 772 |
| Broilers  | 82 | 0 | 82 |
| Layers  | 400 | 0 | 400 |
| Turkey Breeders  | 10 | 0 | 10 |
|  Turkey Fatteners  | 16 | 0 | 16 |

\* Two isolates were *S*. Enteritidis

**2022 Summary of National Salmonella results as per EFSA’s Annual Zoonoses Report:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Type of Bird**  | **No of flocks tested****(Boot swab & Dust)**  | **No of flocks that tested positive for Salmonella** | **No of flocks positive for target serovars** |
| **2022** | Broiler Breeders | 139 | 1 | 1\* |
| Broilers  | 3295 | 1 | 1\*\* |
| Layers  | 465 | 1 | 1\*\*\* |
| Turkey Breeders  | 4 | 0 | 0 |
| Turkey Fatteners  | 455 | 18 | 7\*\*\*\* |

\**Salmonella* Enteritidis
\*\**Salmonella* Enteritidis

\*\*\* *Salmonella* Typhimurium

\*\*\*\* *Salmonella* Typhimurium

**2023 Summary of National Salmonella results as per EFSA’s Annual Zoonoses Report:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Type of Bird**  | **No of flocks tested** **(Boot swab & Dust)**  | **No of flocks that tested positive for Salmonella**  | **No of flocks positive for target serovars** |
| **2023** | Broiler Breeders | 138 | 3 | 2\* |
| Broilers  | 3658 | 59 | 28\*\* |
| Layers  | 465 | 2 | 2\*\*\* |
| Turkey Breeders  | 4 | 0 | 0 |
| Turkey Fatteners  | 461 | 9 | 1\*\*\*\* |

\**Salmonella* Typhimurium & *Salmonella* Enteritidis
\*\**Salmonella* Typhimurium\*\*\* *Salmonella* Typhimurium

\*\*\*\* *Salmonella* Typhimurium

# Private laboratory sampling

**In addition to official sampling by the Competent Authority (DAFM), private laboratory sampling is required to be arranged by the Food Business Operator. The frequency depends upon the bird category:**

**Broilers:** All broiler flocks must be sampled privately by flock owners within 3 weeks of slaughter. The result must be available before birds go for slaughter.

**Broiler breeders:**

1. **Rearing flocks** should be sampled by the producer on 3 occasions:
* As day old chicks:
* At 4 weeks of age
* Two weeks before the birds move to the laying Phase or laying unit.
1. **Adult flocks** should be sampled on farm every two weeks while in lay. This sampling covers adult breeding flocks of *Gallus gallus* comprising at least 250 birds.

**Turkey breeders and turkey fatteners:**

Sampling of flocks of fattening turkeys on the initiative of the food business operator takes place within three weeks before the birds are moved to the slaughterhouse.

Additionally, sampling of flocks of breeding turkeys on the initiative of the food business operator shall take place:

* in rearing flocks: at day-old, at four weeks of age and two weeks before moving to the laying phase or laying unit,
* in adult flocks: at least every third week during the laying period at the holding or at the hatchery.

**Table Egg Layers:**

* **Rearing Flocks**: must be sampled by the producer as day old chicks and as pullets two weeks before moving to the paying phase or laying unit.
* **Adult Flocks:** must be sampled at least every 15 weeks with the first sampling taking place at a flock age of between 22 and 26 weeks.

## Passive surveillance

It should be noted that the active surveillance outlined above is supplementary to the passive surveillance system which is in place in Ireland. This system includes mandatory disease reporting and laboratory based passive surveillance.

 Infection with certain *Salmonella* species is notifiable in Ireland, meaning that anyone who suspects that an animal may have these diseases is legally obliged to notify DAFM (under SI 130 of 2016). The notifiable strains of *Salmonella* in poultry include *S.* Pullorum*, S.* Gallinarum*,* *S.* Enteritidis*, S.*Typhimurium*, S.* Hadar, *S.* Infantis *and S.* Virchow*.*

DAFM also operates a network of regional veterinary laboratories, strategically located around the country. Farmers and private veterinary practitioners (PVPs) submit samples to the laboratories every week. DAFM is confident that these parallel systems provide effective surveillance with regard to detecting an incursion of salmonellosis.

Farmers are encouraged to have their PVP examine and test sick poultry, to report suspicions of notifiable diseases to their local Regional Veterinary Office, and to make use of their local Regional Veterinary Laboratory to aid with diagnosis of disease conditions.

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