



## *Suttonella ornithocola* infection in Garden Birds

### Agent

*Suttonella ornithocola* is a recently discovered bacterium in the family *Cardiobacteriaceae*.

### Species affected

*Suttonella ornithocola* infection has been most commonly observed in blue tit (*Cyanistes caeruleus*); however, other birds within the tit families (Paridae and Aegithalidae) are also susceptible to infection, such as coal tit (*Periparus ater*), long-tailed tit (*Aegithalos caudatus*) and great tit (*Parus major*). *Suttonella ornithocola* infection has not yet been diagnosed in the other groups of British garden bird species.

### Pathology

*Suttonella ornithocola* causes lung disease in affected tits. Microscopic examination of the lung revealed a “pneumonia-like” condition associated with *S. ornithocola* infection.

### Signs of disease

Birds affected by *S. ornithocola* infection tend to show non-specific signs of ill health, for example lethargy and fluffed-up plumage. In addition, they can show breathing difficulties such as gasping. Wild birds suffering from a variety of conditions can exhibit similar signs of disease and there are no characteristic signs of *S. ornithocola* infection that allow it to be diagnosed without specialist veterinary examination. Affected birds are often thin, indicating that the disease may progress over the course of several days.

### Disease transmission

Relatively little is known about *S. ornithocola* in British tit species. Since the bacterium causes a lung infection, aerosol or air-borne infection (*i.e.* cloud or mist of infectious agent released by coughing or sneezing) is thought to be the most likely route of transmission between birds. The length of time that *S. ornithocola* can survive in the environment, and whether this is important in the disease transmission, is unknown.

Since blue tits are involved in the majority of *S. ornithocola* mortality incidents to date, it has been suggested that this species may play an important or key role in the disease life-cycle.

### Disease patterns

In the spring of 1996, eleven mortality incidents involving a range of tit species were reported with a wide distribution across England and Wales. Blue tits were most frequently affected but signs of ill health were also observed in long-tailed tit, coal tit and great tit. The number of affected birds varied in each incident (between one and ten) therefore localised disease outbreaks affecting multiple birds can occur. *Suttonella ornithocola* was isolated from birds from multiple sites; this was the first time the bacterium had been seen, therefore it was considered a new and perhaps emerging disease of British wild birds.

Surveillance since 2005 has identified a small number of *S. ornithocola* infection incidents (ranging from none to two per year) which have occurred with a widespread distribution across Great Britain. Blue tits remain the species most commonly affected and outbreaks typically occur in spring. These findings suggest that *S. ornithocola* infection is well-established (*i.e.* endemic) in the British tit population.

*Suttonella ornithocola* infection was confirmed for the first time in South and Central Finland in spring 2017: three incidents involving blue tit and coal tit mortality were reported. The following year, in April 2018, *S. ornithocola*-associated mortality of tits was described for the first time in Germany: four tit mortality incidents were investigated in southern North Rhine-Westphalia, again with blue tits, coal tits and great tits affected.

In March/April 2020, an epidemic primarily involving blue tits was reported in northwestern Germany: tests have confirmed *S. ornithocola* infection in a number of affected birds from multiple sites. Investigations are underway to further investigate this outbreak.

## Risk to human and domestic animal health

Whilst *S. ornithocola* was first isolated in 1996, it was not fully identified as a novel bacterium until 2005; therefore, relatively little is known about the bacterium and the range of species which can be infected. Nevertheless there are no known reports of infection with this bacterium in humans or any mammal. To date, only birds within the tit family in Britain have been confirmed with the infection; the extent to which other bird species may be susceptible is unknown.

Garden birds in the UK may carry other infectious agents (for example *Campylobacter*, [Chlamydia psittaci](#), [Escherichia albertii](#) and [Salmonella](#) bacteria) that can affect people and pets.

We recommend following sensible hygiene precautions as a routine measure when feeding garden birds and handling bird feeders and tables. Following these rules will help avoid the risk of any infection transmitting to people and help safeguard the birds in your garden against disease.

- Clean and disinfect feeders and feeding sites regularly. Suitable disinfectants that can be used include a weak solution of domestic bleach (5% sodium hypochlorite) and other specially-designed commercial products (See *Further information*). Always rinse thoroughly and air-dry feeders before re-use.
- Brushes and cleaning equipment for bird feeders, tables and baths should not be used for other purposes and should not be brought into the house, but be kept and used outside and away from food preparation areas.
- Wear rubber gloves when cleaning feeders and thoroughly wash hands and forearms afterwards with soap and water, especially before eating or drinking. Avoid handling sick or dead birds directly. For instance, use disposable gloves or pick the bird up through an inverted plastic bag.

## Diagnosis

Diagnosis of *S. ornithocola* infection in garden birds relies on post-mortem examination. The signs of the disease at post mortem are subtle and non-specific therefore additional laboratory tests are used to confirm the diagnosis of the disease. The bacterium is fastidious (*i.e.* difficult to grow in the laboratory) and requires special culture conditions therefore a molecular test has been developed to assist with its detection

If you wish to report finding dead garden birds, or signs of disease in garden birds, please visit [www.gardenwildlifehealth.org](http://www.gardenwildlifehealth.org). Alternatively, if you have further queries or have no internet access, please call the **Garden Wildlife Health** vets on **0207 449 6685**.

## Control

Whilst medicines are available which may help treat *S. ornithocola* infection in captive birds, effective and targeted dosing of free-living birds is not possible.

Where a problem with *S. ornithocola* infection exists, general measures for control of disease in wild bird populations should be adopted:

- Ensure optimal hygiene at garden bird feeding stations, including disinfection (as described above).
- Ensure that water provided for garden birds is fresh and clean on a daily basis.
- Feeding stations (such as bird tables and hanging feeders) encourage birds to congregate, sometimes in large densities, thereby increasing the potential for disease to spread between individuals when outbreaks occur. **If many birds in your garden are affected, we recommend that you consider significantly reducing the amount you feed, or stop feeding for a period (2-4 weeks).** The reason for this is to encourage birds to disperse, thereby minimising the chances of new birds becoming infected at the feeding station. Gradually reintroduce feeding, whilst continuing to monitor for further signs of ill health (See *Further information*).

## Prevention

Following best practice for feeding garden birds is recommended to help control and prevent transmission of disease at feeding stations all year round (See *Further information*):

- Routine good table hygiene. Clean away uneaten food and droppings before putting out fresh food and disinfect feeders/ feeding sites on a regular basis.
- Provision of clean and fresh drinking water on a daily basis.
- Provision of fresh food from accredited sources.
- Rotate positions of feeders in the garden to avoid build-up of contamination in any one area and pay particular attention to clearing food remains that fall on the ground.

## Further information

[Best feeding practices](#) should be followed at all times to help ensure that the birds visiting your garden remain healthy. More information can be found on the Garden Wildlife Health website [www.gardenwildlifehealth.org](http://www.gardenwildlifehealth.org). The booklet “Feeding Garden Birds – Best Practice Guidelines” is also available from the GWH team by (email: [gwh@zsl.org](mailto:gwh@zsl.org), telephone: 0207 449 6685).

## Scientific publications

Foster, G., Malnick, H., Lawson, P.A., Kirkwood, J., MacGregor and S.K., Collins, M.D. (2005) *Suttonella ornithocola* sp. nov., from birds of the tit families, and emended description of the genus *Suttonella*. *International Journal of Systematic and Evolutionary Microbiology* **55**: 2269-2272. [doi: 10.1099/ijs.0.63681-0](https://doi.org/10.1099/ijs.0.63681-0).

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Peniche, G., Rodriguez-Ramos Fernandez, J., Durrant, C., John, S.K., Macgregor, S.K., Cunningham, A.A. (2017) Nested PCR for *Suttonella ornithocola* reveals widespread infection in British Paridae species. *European Journal of Wildlife Research* **63**:50 [doi:10.1007/s10344-017-1105-6](https://doi.org/10.1007/s10344-017-1105-6)

Finnish Food Safety Authority (EVIRA) (2017) *Suttonella ornithocola* infection associated with mortality in Finnish tits (Paridae). European Wildlife Disease Association Newsletter Summer 2017, <http://ewda.org/ewda-newsletter-summer-2017/>

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Nature and Biodiversity Conservation Union (NABU) (2020) *Suttonella ornithocola* bacterium causes blue tit deaths [Accessed April 22<sup>nd</sup> 2020] <https://www.nabu.de/news/2020/04/27990.html>

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