



Common diseases in small and backyard poultry flocks in Great Britain (excluding gamebirds)

Due to the increased popularity of small flock and backyard poultry keeping, vets may find that they are asked to examine and treat more poultry (frequently chickens) from such flocks. It is therefore important to be aware of common diseases that can affect small poultry flocks to aid investigation and differential diagnosis of bird and flock health problems and safeguard the birds' welfare.

Important legislation to be aware of includes:

- Flocks of 50 or more birds are required to be registered with APHA, and owners are also encouraged to register smaller flocks. Information and registration forms can be found at <https://www.gov.uk/government/publications/poultry-including-game-birds-registration-rules-and-forms>
- Any suspicion of notifiable disease (avian influenza or Newcastle disease) must be reported to APHA. Further information can be found at <https://www.gov.uk/guidance/avian-influenza-bird-flu> and <https://www.gov.uk/guidance/newcastle-disease>
- It is illegal to feed catering or kitchen waste to farmed livestock and poultry, even if they are being kept as pets.

Respiratory disease

This is one of the commonest clinical presentations in small and backyard poultry flocks. Respiratory diseases are often multifactorial and may be caused by non-infectious (eg. dust, ammonia) and/or infectious causes. The latter include viruses such as infectious laryngotracheitis (ILT) virus, infectious bronchitis virus (IBV), Mycoplasmas (particularly *Mycoplasma gallisepticum*) and other bacteria such as *Pasteurella multocida* (Fowl Cholera), *Avibacterium paragallinarum* (Infectious Coryza) and *E.coli*. Co-infections with different respiratory pathogens are not uncommon and disease severity can also be influenced by environmental and stress factors. In addition, fungal infection (aspergillosis) can cause respiratory infections particularly in young chicks (brooder pneumonia) associated with inhalation of fungal spores, usually from damp feed or bedding.

Mycoplasma gallisepticum can cause acute or chronic respiratory disease in both chickens and turkeys, and can be transmitted by recovered carrier birds. It is one of the commonest infectious agents in small and backyard poultry flocks.

Infectious Laryngotracheitis (ILT) is an acute herpes virus disease of chickens which presents as severe dyspnoea (gasping) with bloodstained mucus and mortality. Introduction of infection is usually by means of asymptomatic carrier birds.

Infectious Bronchitis (IB) is an acute, highly contagious viral respiratory disease of high morbidity and typically low mortality which can also be accompanied by a sharp drop in egg production and can affect egg quality. Neurological signs are not a feature. Some strains of IB have been associated with renal damage and mortality. Vaccination against IB is commonly undertaken in commercial flocks.

Loss of condition and wasting

These are also common presentations in small flocks. Amongst the causes are egg peritonitis, parasitic disease and neoplasia. Neoplasms, include those with an infectious cause such as Marek's disease, as well as sporadic, non-infectious tumours which are commonest in older birds.

Marek's disease is a common disease of chickens and occasionally seen in turkeys. The causative herpesvirus is widespread in birds and is principally spread in feather dust. Vaccination is used to control the disease in commercial flocks. The disease may present as the classical form, with paralysis of the legs and/or wings due to infiltration of the peripheral nerves and the acute form with multiple lymphoid tumours which cause loss of condition and death.

Endoparasites can cause enteritis and ill-thrift. Internal parasites in chickens include nematode worms such as *Ascaridia galli*, which can cause ill-thrift, enteritis or intestinal impaction, *Heterakis gallinarum* (caecal worm) which is not

usually pathogenic, but has an important role in the transmission of blackhead and *Capillaria* spp. (hairworms) which cause loss of condition and can be found in the upper gastrointestinal tract as well as small intestine. Cestodes can also occur, of which the very small *Davainea proglottina* is the most pathogenic, but larger species also occur. Trematodes are also encountered occasionally.

Coccidiosis is a protozoan disease associated with enteritis, ill-thrift and mortality especially in young birds (usually no more than a few weeks of age). The severity of the disease is related to weight of the challenge, species of coccidia and immunity of the birds. Typical lesions may include thickening and dilatation of the intestine, fluid or haemorrhagic intestinal contents or caseous caecal cores.

Ectoparasites: Red mite (*Dermanyssus gallinae*) and northern fowl mite (*Liponyssus sylvarium*) infestations cause lethargy, egg drop, pale wattles due to anaemia (especially red mite), and can cause deaths. Other common ectoparasites include yellow body louse (*Menacanthus stramineus*). Burrowing mites of the genus *Cnemidocoptes* can cause feather loss (depluming itch mite, *Cnemidocoptes gallinae*) or excessive scaliness of the skin (scaly leg mite, *Cnemidocoptes mutans*).

Egg peritonitis and other *E. coli* infections: So-called egg peritonitis (salpingitis and peritonitis) is **one of the commonest causes of death of adult hens in small and backyard chicken flocks**, and usually arises from ascending *E.coli* infection via the cloaca. Other manifestations of *E. coli* infection include colisepticaemia (affecting multiple body systems), pneumonia and airsacculitis (which may be secondary to viral or mycoplasma infections or non-infectious stress factors) and yolk sac infection (omphalitis or mushy chick disease) in young chicks.

Other diseases

Blackhead (histomonosis) is a protozoal disease caused by *Histomonas meleagridis*, which affects turkeys and sometimes chickens, peafowl and other birds. Clinical signs in turkeys include sulphur yellow droppings and mortality, but the signs in chickens are usually less severe. *H. meleagridis* is transmitted by the caecal worm

Heterakis gallinarum and also by earthworms, enabling prolonged survival in the environment. Because of the susceptibility of turkeys to infection it is inadvisable for turkeys and chickens to have direct or indirect contact.

Duck Virus Enteritis (or Duck Plague) is a contagious herpesvirus disease of adult waterfowl, characterised by a marked seasonality (commonly April-July) and exposure to wild/feral waterfowl, which may be carriers. Muscovy and Indian runner ducks are particularly susceptible but the disease can also occur in other duck species and in swans. The clinical signs include ataxia, inappetence, watery, bloodstained diarrhoea and mortality.

Lead intoxication may cause non-specific signs including loss of condition and gizzard impaction in ducks which can sometimes ingest lead shot from the bottom of the ponds and lakes. Exposure to lead should be regarded as a potential food safety incident, reported to the APHA and measures should be taken to protect the food chain as appropriate. Other toxicities can also occur due to inadvertent exposure of birds, for example to rodenticides.

Diagnosis of disease

Early veterinary intervention is advised to safeguard bird welfare. The Veterinary Investigation Officers in APHA's Veterinary Investigation Centres are happy to discuss individual cases and provide advice on disease investigation and diagnostic sampling of poultry in small and backyard flocks. They and partner post-mortem providers can also undertake post-mortem examinations; cases can be submitted after discussion with the centre concerned. Information on the APHA disease surveillance network is available at <http://apha.defra.gov.uk/vet-gateway/surveillance/diagnostic/index.htm> which includes access to submission forms and a diagnostic guide. A free to use interactive APHA dashboard showing the clinical signs and related diagnoses in small and backyard chicken flocks, based on data collected since 2007, is at <https://public.tableau.com/profile/siu.apha#!/vizhome/AvianDashboard/Overview>