



# Common Poultry Diseases in Small Farm Flocks in Oklahoma

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Small farm flocks of poultry are common in Oklahoma. Disease control and prevention is essential in order to maintain a healthy, productive flock. This fact sheet discusses diseases diagnosed in poultry from small farm flocks.

## Bacterial Diseases

**Infectious Coryza** is an acute-to-chronic disease of chickens, pheasants, and guineas caused by the Gram negative bacterium, *Hemophilus paragallinarium*. Coryza commonly occurs in game chicken flocks. Mortality from the disease is usually low, but significant economic losses result from increased cull birds and decreased egg production. Furthermore, Coryza often complicates and increases the severity of other diseases such as mycoplasmosis.

Transmission of Coryza occurs by direct bird-to-bird contact, inhalation of airborne respiratory droplets, and contamination of feed and water. Coryza is often introduced into flocks by the addition of birds that are apparently healthy, but harbor the bacteria (carrier birds).

- Clinical Signs: Watery eyes, foul smelling nasal discharge, and edema or swelling of the face and wattles. Also, swollen infraorbital sinuses, which often contain a yellow "cheesy" exudate.
- Diagnosis: History, clinical signs with an absolute diagnosis being made by bacterial isolation of the bacteria from the sinuses.
- Treatment: Use of water soluble antibiotics or antibacterials such as erythromycin (gallimycin®), sulfadimethoxine (agribon®), and tetracyclines are moderately effective, but do not eliminate carrier birds.
- Prevention: Good management, sanitation, and an all in and an all out program provide the best way to avoid Infectious Coryza. If possible, raise your own replacements from day-old chicks. In addition, proper disposal of dead birds is important.

A commercial vaccine, which is effective in reducing the economic impact of the disease, is available.

**Fowl Cholera** is an acute infectious disease of poultry, gamebirds, waterfowl, and wild birds. The mortality in the flock is usually severe. A chronic form of the disease may occur following an acute outbreak.

The causative agent for Fowl Cholera is *Pasteurella multocida*—a Gram negative bipolar staining bacterium.

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- Transmission occurs by secretions from carrier birds, infected droppings, cannibalism of dead birds, and contaminated water, feed, equipment, or clothing. Wild birds, predators, and cats are considered to harbor and spread the disease.
- Clinical Signs: Sudden unexpected deaths in the flock, depression, decreased feed intake, respiratory distress, cyanosis (bluish-purple discoloration of the head), and green, watery diarrhea. The disease may be chronic, particularly in chickens. Often there is swelling of a joint, footpad, wattles, or tendon sheaths over the caudal portion of the hock joint.
- Diagnosis: History, clinical signs and lesions observed at necropsy of dead birds. A definitive diagnosis is made by bacterial culture and isolation.
- Treatment: Use of antibiotics such as sulfadimethoxine (agribon®), tetracyclines, erythromycin (gallimycin®), or penicillin will decrease mortality within the flock.
- Prevention: Sanitation, rodent, and predator control, and proper disposal of dead birds. Commercial vaccines are available to aid in the control of fowl cholera within a flock. Vaccination is not recommended until fowl cholera becomes a problem on a premise.

**Avian Mycoplasmosis** is caused principally by three species of Mycoplasma organisms. Mycoplasma gallisepticum (MG) Mycoplasma synoviae (MS) occur in chickens and turkeys. Mycoplasma meleagridis (MM) occurs in turkeys. MG may be seen in other species such as pheasant, quail, guineas, and pigeons. MG commonly called chronic respiratory disease (CRD) may be a serious problem in small flocks, particularly game chicken flocks.

Transmission of mycoplasma occurs by direct contact and airborne respiratory droplets. Transmission may also occur through the eggs from the hen to the progeny, perpetuating the disease in the flock.

### **Mycoplasma gallisepticum (MG)**

- Clinical Signs: Watery eyes, nasal discharge, respiratory distress particularly in young birds, and loss of stamina. Swollen infraorbital sinuses with a secondary Hemophilus (Infectious Coryza) infection is very common in game chickens.

- Diagnosis: Made by serologic tests and isolation of the organism by tracheal culture.

#### **Mycoplasma synoviae (MS)**

- Clinical Signs: Lameness or reluctance to move, swollen footpads, hock joints, wing joints, and green diarrhea.

#### **Mycoplasma meleagridis (MM)**

- Clinical Signs: Decreased hatchability and mortality in very young turkey poults. Crooked, deformed necks and legs. Mild respiratory signs, nasal discharge, and swollen infraorbital sinuses.
- Treatment: Allowed in small poultry flocks, which are not under the NPIP plan. Mycoplasmosis is difficult to control with the use of antibiotics, but lincomycin-spectinomycin (LS-50®), erythromycin (gallimycin®), and tylosin may be of benefit.
- Prevention: Control of Mycoplasmosis in a flock can be conducted by serologic testing and elimination of positive birds. In NPIP flocks, depopulation of the flock is required if Mycoplasmosis is diagnosed. It is probably not possible to maintain a flock free of Mycoplasma when frequent movement of birds in and out of the flock is allowed.

### **Viral Diseases**

**Fowl Pox** is a slow-spreading infectious viral disease of poultry and other birds. The dry form is characterized by proliferative dark skin lesions on the unfeathered skin of the head, neck, legs, and feet. The wet form is characterized by diphtheritic lesions in the mucous membranes of the mouth, tongue, upper digestive tract, or respiratory tract. Fowl pox is caused by avian poxvirus. Mortality in a flock is usually low, but fowl pox can reduce egg production and performance of the flock.

- Transmission: Occurs by blood-sucking arthropods such as mosquitoes and ingestion of sloughed infective scabs. The virus may persist in the environment for long periods of time.
- Clinical Signs: The dry form has raised wart like lesions on the unfeathered areas of the legs and head. The wet or diphtheritic form may cause severe respiratory distress, and discharge from the eyes.
- Diagnosis: May be determined by the history, and presence of typical fowl pox lesions, histopathology, and/ or virus isolation.
- Treatment: No effective treatment is available.
- Prevention: Control is by vaccination and control of vectors. Pigeonpox vaccine is most commonly used to vaccinate chickens. Vaccination is probably warranted for all small flocks.

**Marek's Disease** is a viral-induced-neoplastic disease of chickens characterized by infiltration of the peripheral nerve, brain, and other organs by lymphoid cells. It is usually seen in

young birds up to 10 months of age. The number of affected birds ranges from a few to 30 percent of the flock. However, some lines or strains of birds in a flock may be more severely affected than others.

- Transmission: Occurs by inhalation of virus laden feather follicle dander. The virus may also be spread by excretions from infected chickens.
- Clinical Signs: Inability to use or raise the wings, partial paralysis, blindness, ataxia, and wasting away.
- Diagnosis is made by history, gross lesions, and histopathology.
- Treatment: No effective treatment is available.
- Prevention: Vaccinate at hatching. All birds hatched should be vaccinated for Marek's disease. Requests for vaccinations should be made on birds purchased from mail order hatcheries.

**Infectious Bronchitis** is a highly contagious viral respiratory disease of chickens caused by a coronavirus. Bronchitis is not commonly diagnosed in small flocks in Oklahoma, but if a flock becomes infected, the disease spreads rapidly through the flock resulting in serious respiratory disease and a marked drop in egg production in layers. Flocks, which allow frequent in and out movement of birds, are at the greatest risk of introducing the disease.

- Transmission: Inhalation of airborne respiratory droplets, contaminated feed, and water. Spread of the disease through the flock can be rapid.
- Clinical Signs: Coughing, sneezing, nasal discharge, and respiratory distress. In layers, there may be a decrease in egg production with softshelled or misshapen eggs produced.
- Diagnosis: Made by serologic tests and/or virus isolation.
- Treatment: No effective treatment is available.
- Prevention: Infectious Bronchitis is not a frequent problem in small flocks, but if present may be serious. Control is by vaccination.

**Newcastle Disease** is an acute contagious viral respiratory disease of all birds caused by a paramyxovirus. Pathogenicity varies from mild (lentogenic) to extremely pathogenic (velogenic). Newcastle Disease is not common in most small flocks unless there is movement of birds in and out of the flocks.

- Transmission: Occurs by inhalation of respiratory droplets, excretions, contaminated feed, water, and equipment.
- Clinical Signs: Sudden onset, depression with mild-to-severe respiratory distress, diarrhea, and decreased egg production. In severe cases, some birds may exhibit neurologic signs such as twisting of the head, neck, and paralysis.
- Diagnosis: History, serologic tests, and/ or virus isolation.
- Treatment: No effective treatment is available.

- Prevention: Vaccines are available for control of Newcastle in a flock. Vaccinations should be conducted only if a definitive diagnosis has been made and Newcastle is a recurrent problem in the flock.

**Note:** Diagnostic assistance is available to Oklahoma poultry producers at the Oklahoma Animal Disease Diagnostic Laboratory, Oklahoma State University, Stillwater, Oklahoma 74078, (405) 744-6623. A modest fee is charged for the laboratory service.

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