

Respiratory Diseases of Small Poultry Flocks

Introduction

Poultry may become infected with several types of respiratory illnesses caused by viruses, bacteria, fungi, and parasites. Clinical signs of these illnesses often look very similar. However, successful treatment and prevention of these diseases depends on an accurate diagnosis. Some of the common respiratory diseases are explained briefly.

Aspergillosis (Brooder Pneumonia)

- **Cause:** Common fungus called *Aspergillus fumigatus*, sources of which may include moldy, wet feed; wet bedding; or mold on hatching eggs. Infection occurs when birds inhale large numbers of fungal spores, producing severe inflammation in birds' lungs, air sacs, and sometimes other tissues.
- **Diagnosis:** Respiratory tract cultures and/or microscopic examination of the affected tissues.
- **Treatment and prevention:** Treating individual birds is usually ineffective, very expensive, and not practical. In affected flocks, remove the mold source to prevent new infections. Clean up and disinfect the coop.



Avian Cholera (*Pasteurella multocida*)

- **Cause:** Bacterial infection from *Pasteurella multocida*, which can be acquired from exposure to sick wild waterfowl or rodents in the poultry area or through bite injuries from predators that carry these bacteria in their saliva. The disease can be further spread through fighting in the birds and may cause pneumonia, abscesses in multiple tissues, and often high death loss.



- **Diagnosis:** Bacteria must be cultured in a laboratory from blood samples, abscesses, or dead birds.
- **Treatment and prevention:** Treat the flock with an appropriate antibiotic (ideally based on culture and drug sensitivity information) for at least 10 days. Predator and rodent control is also necessary. Pick up and dispose of dead birds. Clean up and disinfect the coop.

Avian Influenza

- **Cause:** Type A influenza virus of birds, which is most often present in wild and domestic waterfowl and shore birds. Infection is occasionally transmitted to poultry. Two forms of the illness occur: highly pathogenic avian influenza (HPAI) and low pathogenic avian influenza (LPAI). LPAI sometimes produces minimal illness in infected birds, but HPAI is very lethal to chickens, turkeys, and upland gamebirds. Disease must be reported to the Department of Agriculture if detected in Pennsylvania. Clinical signs are highly variable but may include respiratory disease, drops in egg production, swollen head, hemorrhages on the body and comb, and sometimes high death loss.
- **Diagnosis:** Antibodies can be detected with a blood test. Tests that detect the virus from respiratory and cloacal swabs are also available. These tests are conducted at the Pennsylvania Department of Agriculture Diagnostic Laboratories in State College, Harrisburg, and Kennett Square, Pa.
- **Treatment and prevention:** Prevent direct or indirect contact with domestic or wild waterfowl (such as geese or ducks) and their droppings. Avoid high-risk practices such as visiting live bird markets and bird auctions. No vaccines are available for use in the U.S.



Fowl Pox Infection

- **Cause:** Birds become infected with the pox virus through contact with sick birds or infected scabs in the environment. Mosquitos can also transmit fowl pox.
- **Diagnosis:** Typical nodules and scabs can be seen on featherless tracts of skin on the face, wing web, and feet, and often take 3 to 4 weeks to heal and fall off. Nodules can sometimes develop in the mouth and trachea. This form, called “wet pox,” is difficult to recognize and may cause affected birds to die from suffocation.
- **Treatment and prevention:** Keep a closed flock (no new birds of any age or species introduced to the present flock from outside sources) and control mosquitoes. Clean up and disinfect the coop. A very effective vaccine is available that can prevent the illness or stop the existing infection from spreading if detected early.



Infectious Bronchitis (IBV)

- **Cause:** An avian coronavirus. The disease spreads very rapidly and causes coughing, egg production drops, and sometimes death loss in very young chickens. After the initial infection, thin-shelled eggs or eggs with wrinkled shells may be seen.
- **Diagnosis:** Blood test. Some animal laboratories can attempt isolation of the virus from necropsy specimens.
- **Treatment and prevention:** Only supportive care can be provided once the flock is ill. For prevention, keep a closed flock, away from other poultry. Clean up and disinfect of the coop. Vaccines are also available.



Infectious Laryngotracheitis (ILT)

- **Cause:** An avian herpesvirus. Infected chickens develop severe respiratory distress and may cough up bloody mucus. High death loss may be seen. Recovered birds may remain virus carriers and continue to spread the infection among susceptible chickens.
- **Diagnosis:** Clinical signs are very suggestive for ILT. Submit sick or dead birds to the Animal Diagnostic Laboratory.
- **Treatment and prevention:** A very effective vaccine is available that can prevent the illness or stop the existing infection from spreading if detected early. Vaccination prior to taking birds to poultry shows (no less than one month before the show) is highly recommended. A tissue-culture-origin vaccine should be used.



Mycoplasma gallisepticum (MG)

- **Cause:** This bacteria infects chickens, turkeys, and upland game birds. Clinical signs include nasal discharge, infected sinuses and air sacs, pneumonia, and a drop in egg production. Turkeys are the most vulnerable to infection, while chickens sometimes carry this bacteria without showing signs. Spread by bird-to-bird contact or contact with infectious respiratory secretions. Once infected, a bird remains infected for life. Infected breeders also transmit this bacteria into the hatching egg, causing chicks to hatch with the infection.
- **Diagnosis:** Clinical signs, blood testing, and testing for presence of the organism.
- **Treatment and prevention:** The effects of the disease can be reduced with certain antibiotics. Vaccines are also available. For prevention, keep a closed flock and only purchase birds that have tested negative for the disease.



Additional Resources

For more information on flock health, treatment, and prevention of disease, contact the Penn State Animal Diagnostic Laboratory at 814-863-0837.

Prepared by Eva Wallner-Pendleton and Patricia Dunn, Penn State Animal Diagnostic Laboratory, Penn State Extension and Department of Animal Science.

Photos provided by the American Association of Avian Pathologists and the Penn State Department of Animal Science.

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to minorities, women, veterans, individuals with disabilities, and other protected groups. Nondiscrimination: <http://guru.psu.edu/policies/AD85.html>

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2015

Code EE0160 5M7/15mpc

An **OUTREACH** program of the College of Agricultural Sciences

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2013 Code XXXXXX 3/13PODxxxx