

## **Avian Influenza (Bird Flu)**

Avian influenza (AI), commonly called "bird flu", is a virus in the Influenza Type A group which includes avian, swine, equine, and human flu viruses. The avian influenza virus affects many avian (bird) species including chickens, turkeys, game birds (pheasants and quail), ratites (ostrich and rhea), waterfowl (ducks and geese), and wild birds. Wild waterfowl are "natural reservoirs" of many types of AI and carry the virus without showing any signs of infection. It is extremely rare in pet and exotic birds.

While some strains of the AI virus cause no disease in birds, other strains cause severe illness and death to birds. AI strains are divided into two groups based on pathogenicity—the ability of the virus to produce disease. Most AI strains are classified as low pathogenicity (LP) avian influenza and cause little or no signs in infected birds. LPAI poses no serious threat to humans. The strain that is currently a problem in Southeast Asia, the Middle East, Africa, and Europe is a high pathogenicity (HP) strain known as H5N1 HPAI.

Health professionals are concerned about the spread of avian influenza and the threat it poses to humans since we don't have a natural immunity to the virus. People can get HPAI from birds, but it requires extensive, close contact with infected birds. This strain has not been reported in the United States at this time.

This strain is frequently fatal to birds and is easily transmissible between susceptible species. Infections of poultry by the H5N1 HPAI strain in Asia have resulted in the destruction of millions of birds to limit the spread of the disease. Unfortunately, this strain has killed about half of the people who have become infected. All people infected by this virus so far have had direct contact

with infected birds. Fortunately, this disease is not spread from person to person. For HPAI to spread from person to person, the virus would have to mutate-genetically change.

Poultry production (broilers, layers, and turkeys) is the number one animal industry in South Carolina. An infection among poultry flocks could cause significant harm to the state's economy. The poultry industry has been monitoring for AI routinely since before the H5N1 strain appeared. Currently, there is a new national AI monitoring program for the commercial poultry industry. The Clemson University Livestock-Poultry Health Division also does routine monitoring of backyard flocks at markets, auctions, and fairs as well as through the SC Small Flock Certification Program.

### **Symptoms in Humans**

Symptoms of bird flu in humans range from typical influenza-like symptoms (e.g. fever, cough, sore throat, and muscle aches) to eye infections (conjunctivitis), acute respiratory distress, viral pneumonia, and other life-threatening complications. The symptoms and the severity of symptoms will vary with the strain of the virus causing the infection.

### **Protecting Yourself from Infection**

If you plan any foreign travel you should avoid contact with any livestock or poultry for at least 5 days after your return. You should also avoid touching surfaces that may have been contaminated by animal feces and other bodily fluids.

The most important protection is to practice frequent and thorough hand washing. Cleaning your hands often with soap and water or alcohol-based wipes and hand sanitizers helps prevent spread of

flu viruses. To protect others, cough or sneeze into a tissue or your sleeve instead of your hands.

### **Protection Provided by Governmental Agencies**

- The South Carolina Department of Health and Environmental Control (DHEC) and the Center for Disease Control (CDC) keep constant watch for cases of avian influenza. DHEC, the CDC and all public health agencies are cooperating to monitor for cases of avian influenza. Any possible cases are investigated to help prevent potential spread.
- Information about confirmed influenza cases in South Carolina is posted on DHEC's Internet site at <http://www.scdhec.gov/health/disease/acute/flu.htm>.
- The Clemson University Livestock Poultry Health Division keeps constant watch for cases of avian influenza in birds.
- The CDC and the World Health Organization (WHO) have large detection programs to monitor influenza activity around the world, including the growth of possible pandemic strains of the virus, such as avian influenza.
- The CDC has hired a company to develop and produce a vaccine to help prevent bird flu.
- DHEC has developed a comprehensive influenza emergency plan for the state of South Carolina. The plan provides guidance for many agencies and organizations that will help with the response to control the pandemic in South Carolina.
- DHEC helps train physicians, clinicians and laboratory workers in the detection of possible cases of human infection by H5N1 HPAI.
- Your doctor can talk to experts at DHEC and the CDC about avian influenza.

### **Reporting Dead Birds**

An occasional dead bird found in wild or domesticated flocks is not an unusual occurrence. The Clemson University Livestock - Poultry Health Division performs post-mortem examinations (animal autopsies) for a fee to help owners and

veterinarians determine the cause of illness or death. Large numbers of dying or dead birds should be reported to the following agencies:

- death of poultry - State Veterinarian's Office (803-788-2260)
- death of wild birds - Department of Natural Resources (DNR) (800-922-5431).

### **Biosecurity**

Biosecurity literally means the safety of living things or the freedom from concern for sickness or disease. Another definition of biosecurity is security from transmission of infectious disease organisms, parasites and pests. Using biosecurity practices is the best way for all owners of commercial, backyard, and pet birds to protect their animals from all diseases. These practices include:

- People - Avoid visiting other poultry farms, bird shows, and markets. If you do, shower, change clothing and footwear before working with your birds.
- Equipment - Do not loan or borrow equipment or vehicles from other farms. If you do, wash and disinfect all equipment before and after use. Keep your bird houses, pens, equipment, and work areas clean and sanitary.
- Birds - Keep a closed flock. When new birds are obtained at poultry shows or markets, do not include them in the flock immediately. This is an easy way to avoid introducing diseases into your flock. Separate new birds from the flock for 2-4 weeks to see if they show any signs of disease. Keep your birds separate from wild birds. Take sick or dead birds to a diagnostic lab to determine the cause of the illness.
- Wild birds - Keep wild birds away from your poultry building and pens. Don't allow wild birds to nest near your poultry.
- International Travel - It is possible to accidentally bring back a foreign animal disease through contaminated clothing, hides, feathers, food products, etc. If you have contact with foreign poultry or livestock, do not go near any types of birds or livestock for at least 5 days after returning home. Thoroughly clean all travel clothing, shoes, and equipment after returning home.

## Are Poultry & Eggs Safe to Eat?

Avian Influenza is not a foodborne pathogen. Therefore, you cannot get AI from eating properly cooked poultry meat or eggs since the AI virus is killed at 170 °F.

In addition, the United States Department of Agriculture (USDA) maintains trade restrictions on the importation of poultry and poultry products from countries where the H5N1 strain has been detected in commercial or traditionally raised poultry. In the US, any poultry found to be infected with any strain AI is destroyed. Therefore the chance of infected poultry entering the human food chain is extremely low.

Eating properly handled and cooked poultry is safe. Thorough cooking and proper cleaning of cooking-area surfaces and hands are a must. This also prevents infection from other microorganisms found in poultry such as *Salmonella* and *E. coli*.

Use the following USDA Food and Drug Administration (FDA) procedures for safe handling and cooking of poultry and poultry products.

- Wash hands with warm water and soap for at least 20 seconds before and after handling raw poultry and eggs.
- Clean cutting boards and other utensils with soap and hot water to keep raw poultry or eggs from contaminating other foods.
- Cutting boards may be sanitized by using a solution of 1 tablespoon chlorine bleach and 1 gallon of water.
- Cook poultry to an internal temperature of at least 165 °F. Consumers can cook poultry to a higher temperature for personal preference.
- Cook eggs until the yolks and whites are firm. Casseroles and other dishes containing eggs should be cooked to 160 °F.

- Use pasteurized eggs or egg products for recipes that are served using raw or undercooked eggs. Some examples of these kinds of dishes are Caesar salad dressing and homemade ice cream. Commercial mayonnaise, dressing, and sauces contain pasteurized eggs that are safe to eat. Pasteurized eggs and egg products are available from a growing number of retailers and are clearly labeled.

For more information on safe handling of eggs and poultry, see [HGIC 3507, \*Safe Handling of Eggs\*](#) and [HGIC 3512, \*Safe Handling of Poultry\*](#).

### Sources:

1. Understanding Avian Influenza - "Bird Flu"
2. [http://www.scdhec.gov/health/disease/acute/avian\\_flu.htm](http://www.scdhec.gov/health/disease/acute/avian_flu.htm)
3. Biosecurity for the Birds  
<http://www.aphis.usda.gov/vs/birdbiosecurity/>
4. Backyard Biosecurity Practices to Keep Your Birds Healthy  
[http://www.aphis.usda.gov/lpa/pubs/pub\\_ahbiosec.pdf](http://www.aphis.usda.gov/lpa/pubs/pub_ahbiosec.pdf)
5. Avian Influenza ("Bird Flu") - Frequently Asked Questions  
[http://www.clemson.edu/LPH/Avian\\_Flu\\_FAQ\\_090106.pdf](http://www.clemson.edu/LPH/Avian_Flu_FAQ_090106.pdf)
6. Cover Your Cough  
<http://www.cdc.gov/flu/protect/covercough.htm>
7. What Consumers Need to Know About Avian Influenza
8. <http://www.cfsan.fda.gov/~dms/avfluqa.html>
9. Avian Influenza  
[http://www.usda.gov/wps/portal/!ut/p/\\_s.7\\_0\\_A/7\\_0\\_1RD?printable=true&contentidonly=true&contentid=2005/11/0511.xml](http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1RD?printable=true&contentidonly=true&contentid=2005/11/0511.xml)

---

This information has been reviewed and adapted for use in South Carolina by James H. Blake, HGIC Director/Adjunct Professor and J. G. Hunter, HGIC Nutrition Specialist, Clemson University. (New 04/07. Revised 08/07.)

---

This information is supplied with the understanding that no discrimination is intended and no endorsement by the Clemson University Cooperative Extension Service is implied. All recommendations are for South Carolina conditions and may not apply to other areas. Use pesticides only according to the directions on the label. All recommendations for pesticide use are for South Carolina only and were legal at the time of publication, but the status of registration and use patterns are subject to change by action of state and federal regulatory agencies. Follow all directions, precautions and restrictions that are listed.