

# Department of Animal Science

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## AVIAN INFLUENZA 2022: FREQUENTLY ASKED QUESTIONS

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The Tennessee poultry industry along with commercial and backyard flock producers are on high alert after the recent finding of highly pathogenic avian influenza (HPAI) H5N1 in commercial turkeys in Indiana. A strong biosecurity program is our best defense at protecting our state's poultry flocks from this devastating disease. Here are answers to frequently asked questions concerning avian influenza,

### What is avian influenza (AI)?

Avian influenza (AI) is a highly contagious viral disease of birds caused by infection with avian (bird) influenza Type A viruses. Four types of influenza viruses exist: A, B, C and D. Type A viruses occur naturally in wild aquatic birds worldwide (particularly waterfowl, which may show little or no symptoms and are rarely affected by the virus) and can be easily passed to domestic poultry (such as chickens and turkeys) with devastating effects. There are numerous different subtypes of influenza Type A viruses named for two types of proteins on the virus surface. These proteins are referred to as Hemagglutinin "H" and Neuraminidase "N." The Centers for Disease Control and Prevention indicate there are at least 18 known forms of H and 11 known forms of N in birds, designated by various numbers (for example, H5N1 or H7N9). AI has an incubation period of 3-7 days, depending on the viral dose, poultry species affected and exposure route. Avian influenza in any of its forms is a serious threat to both the commercial poultry industry and backyard poultry keepers.



*Photo credit: Tom Tabler*

### What is the difference between low pathogenic and highly pathogenic avian influenza?

Avian influenza viruses are divided into two groups — low pathogenic (LPAI) and highly pathogenic (HPAI) — based on the ability of the virus to produce disease, the severity of the illness and mortality associated with the group.

- **HPAI** spreads rapidly through a flock and has a very high death rate. HPAI is an extremely infectious and fatal form of AI that generally kills 95-100 percent of an infected flock within only a few days. While waterfowl may carry HPAI with little or no symptoms, occasionally, high death rates are seen in certain other species of wild birds.
- **LPAI** is generally less severe and may cause only minor illness in domestic poultry and occurs naturally in migratory waterfowl. However, there is great concern because some LPAI viruses (particularly H5 and H7 subtypes) are capable of mutating into HPAI viruses. Therefore, both HPAI and LPAI cases are taken very seriously by state and federal officials and the commercial poultry industry.

## Can avian influenza affect humans?

Avian influenza viruses do not often infect humans. The risk of contracting AI from birds is very low. However, there have been rare sporadic cases where human infections with avian viruses have occurred in some regions of the world. These cases were usually the result of very close physical contact with infected birds or with nasal secretions and feces of infected birds.

## Where and how does avian influenza start and move through the environment?

Numerous migratory bird species (particularly waterfowl) that may carry the AI virus use the same breeding and staging grounds in northern North America and Siberia. Species from North America and Asia often times co-mingle on these grounds, providing opportunity for AI viruses of different types to move between birds, mutate or even co-exist in the same bird. These birds may then carry the virus long distances through various flyways as they migrate because the virus is usually not pathogenic to waterfowl or other migrating species. As these wild birds fly south for the winter and north in the spring, their flyways take them over much of the US where they can shed the virus along the way. AI viruses are shed in the feces and respiratory secretions of infected birds. The fecal-oral and respiratory transmission routes can rapidly spread the virus throughout a poultry flock; regardless of whether that flock is someone's small backyard flock or a 25,000-bird commercial poultry house. Clothes, shoes, shared equipment and vehicles can pick up the virus from the environment and must be considered possible transmission routes. AI will not magically appear in a commercial poultry house or backyard chicken pen. It must be put there somehow, most likely through a lapse in biosecurity protocols. Walking through fecal material before entering the chicken house or pen should be considered a highly likely transmission route. It is critical to disinfect footwear before entering the poultry house or pen or wear disposable footwear covers. Also, use hand sanitizer before entering and after leaving the chicken house or pen.

## Can AI be prevented?

Unfortunately, there is **no treatment or cure once birds have become infected** with avian influenza. Therefore, a strong biosecurity program is the best defense against contracting avian influenza. We cannot control where migratory waterfowl may fly and we cannot prevent them from carrying the AI virus with them and depositing it wherever they go. However, we can put in place and follow effective biosecurity practices, prevent contact between domestic birds and wild

birds (particularly waterfowl), and immediately report cases of sick or dying birds to the proper officials. Biosecurity includes practices designed to reduce the chances of an infectious disease such as AI being carried onto your farm by people, animals (wild or pets), equipment or vehicles. It also includes practices to reduce the chance of disease leaving your farm should it occur. Isolate yourself and your farm as much as possible. Stay away from other poultry (swap meets, flea markets, chicken auctions) and other people that have poultry. Do not introduce new birds onto your farm at this time. Establish a good rodent control program because rodents carry many diseases and can track disease onto your farm. Avoid locations that other chicken owners often frequent (feed stores, poultry supply houses, co-ops, cafes, coffee shops, etc.). Keep a 3-gallon sprayer of disinfectant in your vehicle and, if you must go to town, disinfect your vehicle's tires and undercarriage when you pull off the road and into your driveway before you check your chickens. Minimize or eliminate traffic flow. If you are a backyard flock owner, no one needs to be near your birds but you. If you are a commercial producer, no needs to be near your birds but you and representatives from the company you grow for (service techs, feed truck drivers, veterinarians, etc.). Use footbaths (dry bleach works well) and dedicate footwear or plastic boot covers to your pen or, if you are a commercial grower, each individual chicken house. It's very easy to track virus-laden manure that was dropped by migrating waterfowl between two chicken houses or in front of a chicken pen into the house or pen and infect the flock. Know how to recognize disease symptoms and learn how to spot sick chickens or birds that simply "aren't doing right."

### What symptoms should I watch for?

Unfortunately, in the beginning, AI symptoms may look like symptoms of other respiratory diseases. However, an extreme and sudden increase in mortality is a good indication you may be dealing with more than a normal respiratory infection. Possible symptoms include:

- Coughing
- Sneezing
- Nasal discharge
- Swollen sinuses
- Watery eyes
- Twisted neck
- Stumbling or falling down
- Dehydration
- Diarrhea
- Depression
- Huddling
- Lethargy
- Decreased feed and water intake
- Decreased fertility and hatchability
- Decreased egg production
- Misshapen eggs (shells that are wrinkled or flat on one side)
- **Sudden and extreme increase in mortality** (perhaps without symptoms)

## Are poultry and eggs safe to eat?

Poultry and eggs are safe to eat if handled properly after leaving the grocery store and cooked properly at home. No meat or eggs from infected flocks will ever enter the food supply. All commercial poultry flocks in the US are tested for avian influenza virus at the farm before taken to the processing plant. Cooking methods already recommended by the USDA and FDA for poultry and eggs to prevent other infections will destroy the avian influenza virus. It is recommended that poultry be cooked to at least 165 F. This is true for all poultry at all times, not just during a disease situation. As a matter of personal preference, some consumers may wish to cook poultry to a higher temperature.

## How do I report sick or dying birds?

If you suspect a problem or have multiple sick birds all at once or unexplained high mortality without symptoms, say something immediately. If you are a commercial poultry grower in Tennessee, contact your service technician for guidance and assistance. If you have backyard chickens and suspect a serious problem, contact

- Your local county Extension agent,
- Your local veterinarian,
- Tennessee State Veterinarian's Office (615-837-5120), or
- Middle Tennessee AgResearch and Education Center (931-486-2129) and ask for a poultry specialist

**Again, there is no cure for avian influenza. Prevention is our best protection.** A strong biosecurity program is the best defense we have against avian influenza. Tennessee has plans in place to handle an AI outbreak. However, with proper biosecurity on everyone's part, hopefully we won't need to use those plans.



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