Avian Influenza – When birds get the flu

Everyone hates when they get the flu. It can knock you out for days, even for weeks. Influenza viruses are known to infect many different animals, not just humans. There are many types of flu, some are very severe and some mild. Some will infect a range of species, others are more specific.

In order to identify the different flu viruses, they have been classified into 3 types – A, B, and C. Influenza A viruses are found in many different animals, including migratory waterfowl and shorebirds, domestic ducks, chickens, turkeys, pigs, and horses as well as humans. Influenza B viruses circulate widely only among humans. Types A and B are responsible for flu epidemics that we commonly see. Type C influenzas cause only mild respiratory illnesses and are not involved in epidemics.

Within a given influenza type, there will be many strains. Strains are classified according to their chemical makeup and will be given a series of letters and numbers to denote this. Examples include H7N2 or H5N2. This is what you will find when reading about a flu outbreak and identifies what kind of flu it is. Strains differ greatly in their effects on animals and humans.

Mild flu strains sometimes change into severe stains. You may read about "low pathogenicity" or "highly pathogenic" strains. It is the severe or "highly pathogenic" strains that are feared, both in animals and humans. That is because they are extremely infectious and contagious and can race through populations. Strains of influenza that have been confined to one species of animal have been known to change and infect other animals. In addition, flu viruses of different strains and severity are able to mix and recombine to form new strains with previously unseen effects. This happens when multiple influenza strains are present and is one of the ways that new flu epidemics can be started.

When the flu is carried by a bird, it is called Avian Influenza. Avian Influenzas are Type A viruses and there are many different strains. Most of these strains only cause flu in birds; others can cause flu in humans, although this is uncommon. This winter, there have been reports of a bird flu in Asia, the H5N1 strain, causing influenza in humans. We have had no cases of this type of flu in the U.S. It is transmitted from birds to humans, most likely through direct contact with infected birds but is not currently being transmitted between humans.

Recently, we have had two isolated outbreaks of influenza in poultry flocks in Delaware. It was identified as the H7N2 strain that has little or no potential for causing flu in humans. The main concern is for the health of poultry flocks in the region and that is why containment efforts were swift and comprehensive. Rampant flu that is highly pathogenic (severe strains) can devastate flocks quickly as has happened in a few outbreaks in other regions in the past.

Fortunately, these severe outbreaks of highly pathogenic flu are uncommon. In the current situation, the flu virus that was found in Delaware chicken flocks was a mild form (low pathogenicity). This mild form of avian influenza is much more common. That means that severe reactions and death of animals would be limited in an infected flock. With flu viruses there is always a potential for the strain to change to a highly pathogenic form if left unchecked. That is one of the reasons why the 2 flocks in DE where avian influenza was found were quickly quarantined and the birds destroyed.

From an economic standpoint, flu in our commercial poultry flocks is of great concern. Of course, any birds that are sick in a flock cannot be used for food. Flocks that test positive for avian influenza are required to be destroyed on the farm to prevent spread and reduce the chance for the development of more severe strains. From a broader perspective, a significant portion of our poultry production is exported. Foreign buyers will not import poultry meat or products if they perceive that there is a risk. After the outbreak in Delaware was announced, many countries banned imports of all US poultry, even though the outbreak was limited. Import bans place an economic hardship on the poultry industry as a whole and therefore on individual poultry growers. In Delaware, poultry is the most important agricultural business in the state, providing livelihoods for over a thousand farm families and jobs for thousands more in the poultry industry.

Wild bird populations serve as reservoirs of Avian Influenza. In particular, waterfowl such as ducks and shorebirds such as ruddy ternstones have been known carriers. Most of the time, these wild species show little or no symptoms. However, when the same flu virus infects a domestic flock of birds such as chickens or turkeys, the results can be devastating. Although contacts with wild birds can introduce flu to a backyard or commercial flock, more commonly it is introduced through some kind of contact with another infected flock such as a person carrying the virus on their clothing or using contaminated farm equipment.

When you got the flu, how did you get it? - by being next to someone who sneezed most commonly, drinking from the same glass, touching where someone has sneezed and then touching your nose or mouth, or finishing someone's plate that had the flu. When birds are infected with avian influenza, at some point they will shed virus in nasal secretions, eye discharges, saliva and feces. With avian influenza, the virus can remain viable for long periods of time at moderate temperatures and can survive indefinitely in frozen material. In cool temperatures, the virus will commonly survive 30 days in manure. It is possible therefore to carry the virus from farm to farm on clothing, equipment, manure picked up on boots, or other similar means and then infect a new flock. A fraction of an ounce of manure could potentially contain enough virus particles to infect one million birds.

You and I might get a flu shot before the flu season, what about a chicken or turkey? With poultry flocks, vaccines are commonly used for a number of diseases. However, current vaccines for Avian Influenza are not used because they are not entirely effective and they are also very expensive relative to the cost of other poultry vaccines.

Poultry growers therefore must use biosecurity measures to protect against avian influenza. Biosecurity is a term for all those procedures that a grower uses to isolate and protect his or her flock against possible infection. It includes limiting access to poultry houses, controlling traffic, disinfecting equipment, using clean clothes or disposables, good sanitation, and eliminating contacts with other flocks. You may have read about or seen foot baths with disinfectants being used around poultry facilities. This is to kill the virus if inadvertently picked up on shoes or boots. If the virus is not brought to the poultry house, the birds can't get the flu.

How do you know if a chicken has the flu? They may cough and sneeze, have ruffled feathers, soft shelled eggs, exhibit droopiness, loose their appetites, have blue coloring in their comb, show swelling of the head or other body parts, have diarrhea, be unable to stand, have bloody discharges, have difficulty in breathing, and in severe cases may die. Many are similar to the symptoms that you or I might have when we have the flu. If a bird is suspected of having the flu, it needs to be tested. The University of Delaware has a Poultry Diagnostic Lab that routinely tests symptomatic poultry for diseases and has been the focal point in testing for avian influenza during the recent limited outbreak in DE. Contact the Delaware Department of Agriculture or a poultry professional for information and assistance in testing if you have poultry that you are concerned about.