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Feathered Facts

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UF/IFAS Extension Baker County

Extension Friends,

Last month's issue of *Feathered Facts* dealt with diseases that can potentially affect your poultry flock. This month we are going to focus on a set of measures that you can employ that will help prevent disease and help stop the spread of disease: BIOSECURITY. We will also cover certain diseases that can potentially be spread from poultry to humans and how you can protect yourself and your family. As always, if I can be of further assistance to you in these areas, please contact me by one of the means listed on the back page of this newsletter.

Sincerely,

Michael A. Davis, Ph.D.

UF/IFAS Extension Baker County

Biosecurity for the Small Flock



While disease in the flock is a concern for all poultry producers, small flocks tend to have more exposure to certain diseases than commercial flocks because of the differences in confinement and rearing systems. Disease can be introduced into a backyard flock through various means including:

- Introduction of diseased stock
- Migratory birds and other animals
- Clothing
- Vehicles
- Equipment

The use of biosecurity practices can help you to reduce the potential introduction or spread of disease and reduce the risk to your flock.

Biosecurity is loosely defined as a set of preventive measures which are designed to reduce the risk of transmission of infectious diseases. There is not a "one size fits all" solution, but following principles associated with certain aspects of the operation will help to reduce your risk.

The three major components of biosecurity are:

1. Isolation
2. Traffic (movement) control
3. Sanitation



Source: United States Department of Agriculture

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Video from USDA-APHIS on backyard bird health. The video discusses the importance of segregating new birds from the established flock and other information on diseases. It features Healthy Harry, the healthy birds spokesperson and USDA veterinarian Dr. Kate Bowers. Click on the picture above or this [link](#) to view the video.

USDA/APHIS information on biosecurity for your flock can be found [here](#).



Video from USDA-APHIS on backyard bird health. The video discusses the importance cleanliness and sanitation when dealing with your flock. It features Healthy Harry, the healthy birds spokesperson and USDA veterinarian Dr. Kate Bowers. Click on the picture above or this [link](#) to view the video.

Avian Diseases Transmissible to Humans

Although many diseases that are associated with poultry only affect avian species, there are some diseases that can affect both birds and humans alike. While it is extremely unlikely that you will become infected with one of these diseases from your backyard flock you should know about them in case medical attention is needed. In most cases following best management practices, sanitation procedures and a good dose of common sense will keep you and your birds healthy.

The technical term for an animal disease that can be spread to humans is a zoonosis. The infectious agents of these diseases can be bacterial, fungal, protozoal, or viral. The seriousness of the disease (if transmitted to humans) is variable in regards to age, prior health status, current immune status, virulence of the organism, dose level, and whether a therapy is used. Generally, those persons that are very young, very old, or are in some way immunocompromised are at the greatest risk for acquiring disease.

AVIAN INFLUENZA—Avian influenza receives a lot of attention in the media because of its virulence in birds. While there have been isolated cases in other countries of AI strains infecting humans, there have been no cases confirmed in the US. Cases of confirmed AI transmission to humans have been in areas where the people and the birds were in constant close quarters and the humans were exposed to infected bird excretions. Other notes of interest concerning AI include:

- Even though the virus has been isolated from hatching eggs, there is no evidence that birds can hatch out with AI as the disease kills the developing embryo.
- Poultry that originate from areas of the world where the virus is common are not allowed to enter the US legally.
- All commercial poultry that enter Florida from other states are required to have an entry permit and come from influenza-free flocks.

SALMONELLA SPP. AND E. COLI—Both of these bacteria belong to the family *Enterobacteriaceae*. While *Salmonella* usually gets more attention for being associated with poultry, both types of bacteria can be acquired from poultry.

Salmonella bacteria are considered to be widespread in the environment and are associated with animals including birds, reptiles, mammals and amphibians. There have been reported outbreaks of the disease, Salmonellosis, associated with handling of chicks, ducklings and poultry. Since the bacteria typically resides within the intestinal tract of the animals, particularly in the feces, care should be taken by avoiding contact with the feces, washing hands with soap and water after handling animals and avoidance of hand-to-mouth contact.

Escherichia coli is also found in the intestinal tract of many animals. The primary routes of infection are direct fecal contamination or consumption of food or water that has been contaminated by feces. Most strains of *E. coli* are not considered to be pathogenic. However, there are some strains that can cause severe illness including *E. coli* O157:H7.

Typical signs and symptoms of *Salmonella* or *E. coli* infection include diarrhea, vomiting, fever and abdominal cramps. The very young, elderly, and those with compromised immune systems are more likely to develop severe symptoms from infection. The following tips will help to reduce the risk of infection by these bacteria:

- Avoid contact with the feces of animals unless you are wearing the proper protective gear.
- Anyone who handles birds of any age should wash their hands thoroughly afterwards. If soap and water are not available, use alcohol-based wipes or hand sanitizer.
- Do not allow children to nuzzle or kiss poultry of any age and wash hands after handling.

Biosecurity for the Small Flock

With respect to biosecurity, isolation usually refers to the confinement or containment of animals within a controlled environment. An example of this is fencing. Isolation of animals helps to keep them within the controlled environment and it also helps to keep unwanted animals out of the controlled area. Isolation can also refer to the segregation of animals by type and/or age. This is important because there are disease-causing agents that may not be harmful to one species/age group, but can be harmful to another. Many commercial farms use an all-in/all-out system to reduce the potential for pathogen transfer between age groups. This also allows for a period of “down time” between flocks so that potential areas of concern can be cleaned/sanitized. As this is not usually possible for a small flock owner, it is advisable to segregate animals by species/age as best you can to reduce the potential for disease spread.

In the case of biosecurity, traffic refers to the movement of people, machinery and equipment both onto and within the premises of an operation. The best practice is to limit traffic in and around the rearing area as much as possible since many diseases can be spread by people, machinery and equipment.

Sanitation refers to the cleanliness of the people, machinery and equipment that move onto and within the operation. Many diseases are able to survive for long periods of time on these types of items so it is imperative to make sure that traffic is low and sanitation is performed.

Now that you have an idea of the basics of biosecurity, you can address specific needs for your operation. The tips listed below will help you to make your flock more biosecure and will limit the spread of any disease within you operation.

- Maintain a separate pen or area for any new birds that you bring onto the farm. These birds pose the greatest risk as they may be infected with disease but not be exhibiting signs or symptoms. Quarantine new birds for a minimum of

2 weeks and, if possible, keep them separate from the rest of the flock for 4 weeks. Make sure to watch for signs of illness during this time.

- The use of wood for pens and structures is common, but remember that wood is porous and can harbor pathogens. Use other materials such as plastic or metal if possible.
- Chicks or replacement birds should be purchased from a reputable breeder/dealer. Make sure to check the vaccination status of birds that you purchase.
- When moving personnel, machinery, or equipment on the farm, move them from “clean to dirty”. This means that, in general, traffic should move from the youngest birds to the oldest birds and from the regular rearing area to the isolation area. Young birds are typically more susceptible to disease than fully grown birds.
- Make sure to clean and disinfect feeders and waterers on a regular basis. Since these are communal areas, transmission of disease can often occur here.
- Wash hands or use hand sanitizer when moving through groups of birds. This will help to eliminate the potential spread of pathogens by personnel.
- Have a clean-out schedule. It is important to clean the rearing area on a regular basis. This should include removing old litter and bedding material as these can be places where pathogens hide out. If you have a disease outbreak within your flock, make sure to clean and sanitize the area before the re-introduction of new birds to the area.
- Use correct pest control for rodents and insects in the rearing area. They are notorious for spreading disease.

Additional information on biosecurity from the USDA can be found [here](#).

Table 1. Persistence of Selected Poultry Diseases Outside of the Host.

Disease	Timespan
Infectious Bursal Disease	Months
Coccidiosis	Months
Fowl Cholera	Weeks
Marek’s Disease	Months to Years
Newcastle Disease	Days to Weeks
Mycoplasmosis	Hours to Days
Avian Tuberculosis	Years

Adapted from *Biosecurity for Poultry Flocks*. 1997. J.S. Jeffery, University of California Cooperative Extension, Poultry Fact Sheet No. 26.: <http://animalscience.ucdavis.edu/Avian/pfs26.htm>



Video from USDA-APHIS on backyard bird health. The video discusses the importance of knowing your backyard birds when they’re healthy as well as the signs of illness. It features Healthy Harry, the healthy birds spokesperson and USDA veterinarian Dr. Kate Bowers. Click on the picture above or this [link](#) to view the video.

A reference for many poultry diseases, *Poultry Disease Manual*, can be ordered [here](#).

Additional information about *Salmonella* and backyard poultry can be found [here](#).

ENCEPHALITIS VIRUSES—Viruses that cause encephalitis such as Eastern Equine Encephalitis, St. Louis Encephalitis or West Nile are all present in wild bird populations within Florida. These birds become infected with the virus by a bite from a mosquito that is carrying the virus. These viruses are transmitted to humans in the same manner, by mosquitos. These viruses are not transmitted from person to person or from the consumption of chicken meat or eggs.

Because of the nature of Florida's climate anyone could be bitten by a mosquito that is carrying one of these viruses. However, only a small number of people actually become sick. The Florida Department of Health and many other mosquito control districts around the state actually use adult chickens to monitor for these viruses in the area. These Sentinel Chickens are housed in coops that are very similar to coops that would be used by owners of backyard flocks. When bitten by a carrier mosquito the chickens do not develop the disease but they do produce antibodies to the virus. By testing the level of antibodies in the blood of these chickens, health officials can determine the presence and level of the virus in an area. Points to remember are:

- These viruses are transmitted to humans by mosquito bites.
- These viruses are not transmitted from the hen to the egg.

NEWCASTLE DISEASE—Newcastle Disease is a serious respiratory disease in poultry that is caused by a paramyxovirus. In poultry, the

disease is highly contagious and can cause mortality in the flock that can reach 100%. This paramyxovirus can also infect humans, although the disease presentation is very different in humans as compared to poultry.

In humans the paramyxovirus causes a localized infection in the eye called conjunctivitis. This condition is commonly referred to as "pink-eye". The infection tends to last from 5 to 10 days and resolves completely. Typical symptoms include discomfort because of localized swelling and a very "bloodshot" look in the eyes. Topical eye drops and ointments are available to reduce the discomfort and inflammation and also to decrease the risk of secondary bacterial infections.

The main groups that should be concerned about contracting this disease from poultry include:

- Persons administering live-virus vaccines to birds
- Individuals that are performing post-mortem examinations on actively infected birds
- Individuals that work in a lab setting for isolation and concentration of the virus.

Most individuals that handle poultry or have a backyard flock should not have a concern about contracting this virus from their birds. Reputable breeders will vaccinate chicks before sale as production animals.

Additional information about these diseases can be found at the [Centers for Disease Control and Prevention](#) website or by visiting the [UF/IFAS Extension EDIS database](#).

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