Department of Animal Science

FOWL POX IN BACKYARD POULTRY FLOCKS

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In recent years, there has been an increasing interest in keeping small backyard poultry flocks by both urban and rural residents across Tennessee. These small flocks are kept for a variety of reasons including food (meat and eggs), entertainment, shows, exhibitions and fairs, 4-H/FFA projects, etc. Even though flock owners go to great lengths to care for their flocks and have great interest in keeping them safe, disease protection and the health status of the flock is often overlooked. There are several common diseases that threaten small flocks that can easily be vaccinated against and should be considered in any flock health management program. Fowl pox (also known as avian pox) is one such common disease in backyard, hobby and exhibition poultry flocks. The pox virus is also capable of causing disease in almost any avian species, including pigeons, wild birds, turkeys, ducks, quail and pheasants, along with all breeds of chickens. Infected birds exhibit poor growth, reduced egg production, weight loss, and possibly death in severely infected flocks. The disease was a known problem as far back as the 17th century and continues to cause problems today.

Fowl pox

Fowl pox is a slow-spreading viral disease of chickens characterized by lesions on the non-feathered areas (dry or skin pox) (Figure 1) and/or the mucous membranes of the oral cavity, larynx and trachea (wet or diphtheritic pox) (Figure 2).

Figure 1. Dry (or skin) pox.

Figure 2. Wet (or diphtheritic) pox.

Source: American Association of Avian Pathologists (AAAP).

Mortality is often low, particularly with dry pox (1 to 5 percent); however, depending on the severity, cases of wet pox may have much greater mortality rates.

The disease results from infection with the avian pox virus, which is classified as at least three different types or strains, including the fowl pox virus (FPV) that affects chickens and turkeys; pigeon pox virus (PPV) that occurs in pigeons; and canary pox virus (CPV) that affects many different species of wild birds. Each viral strain causes disease only within certain species of birds; for example, chickens cannot be infected with PPV, and wild birds are not affected by FPV.

Dry vs. wet pox

The lesions associated with the dry, cutaneous form of pox start as small blisters, then progress into wart-like nodules, later forming dry scabs. This dry form is the most common variety of the disease. The lesions may appear anywhere on the body that does not have feathers (comb, wattles, face, eyelids, feet and legs). In the beginning, the wart-like nodules often appear as small, yellow bumps; however, they gradually increase in size over time. The lesions usually change color over time as they become larger, eventually becoming dark brown, roughened, dry scabs. The scabs usually remain in place for about 2 to 4 weeks and then loosen on their own and drop off. The skin underneath appears as smooth scar tissue. The scabs that drop off contain the pox virus and are highly infectious to other flock mates.

Wet pox takes a different and more dangerous course than dry pox. Wet pox causes throat and upper respiratory tract lesions that usually begin as white nodules and may become large patches that appear as yellow cheesy masses or growths. Eating, drinking and breathing may become compromised if these growths become severe enough. Severe cases of wet pox will likely result in death of affected birds. Both dry and wet forms of the disease can be present in the flock at the same time, and, occasionally, individual birds may be infected with both forms. Depending on the form, birds affected often show:

- Decreased appetite
- Drop in egg production
- Weight loss
- Yellow canker lesions in the mouth
- Eyelid swelling or eyes sealed shut or scabbed over
- Scabs or wart-like lesions on the comb, eyelids, wattles, face and feet
- Young birds may display growth retardation

While wet pox may result in mortality, individual birds affected with dry pox usually recover in 2 to 4 weeks. However, it may take several weeks or months for the entire flock to recover because the disease can be slow spreading, and it may take an extended period of time for it to work through the flock.

Transmission

Fowl pox is transmitted to poultry flocks primarily through biting mosquitoes (*Culex* and *Aedes* species) or new birds introduced into the flock that are latent carriers of the disease. Mosquitoes that feed on an infected bird are able to carry the virus in their salivary glands for up to 8 weeks. When these infected mosquitoes bite another chicken, they are able to transmit the pox virus to that bird and to every other uninfected bird on which they feed. In addition, once one flock member has become infected, that chicken is now capable of transmitting the virus to other flock members through scratches or broken skin and mucous membranes (often associated with pecking, scratching or fighting each other).

The virus is present in the dried scabs that fall off infected birds, the feathers, and skin dander and often infects other birds by entering through skin abrasions and cuts. Birds of any age are susceptible to fowl pox, and the disease can occur at any time of year. The pox virus is highly resistant in the dry scabs and can easily be transmitted to noninfected birds; however, fully recovered birds do not remain carriers.

Controlling avian pox

There is no satisfactory treatment for avian pox, so it is best to prevent the disease by vaccination. There are a variety of pox vaccines available for use in backyard and commercial flocks. If it is a mosquito-prone area, small flock owners should firmly consider vaccinating their birds with pox vaccines. A wing stick method of vaccination that uses a two-needle applicator is most often used in chickens and pigeons, while a thigh-stick vaccination method is used in turkeys. Birds can be vaccinated at any age if necessary; however, follow recommendations on the vaccine label as to age and route of administration. Do not forget to check the expiration dates of vaccines. It is critical to check vaccinated birds for a “vaccine take” 7 to 10 days after the vaccine is administered. Look for an area of swelling and scab formation at the injection site. Most birds in the flock should show vaccination takes to ensure satisfactory vaccination of the flock. Vaccination can be beneficial in limiting further spread of the disease should it occur in a flock. Avian pox spreads slowly through a flock; therefore, vaccinating when less than 20 percent is showing lesions can limit spread of the disease. If the local feed store or co-op does not have the vaccine, there are multiple companies on the internet that sell the vaccine. Routine fowl pox vaccination will help prevent problems associated with the disease and will increase the enjoyment of backyard flock keeping.

Sources of help

- Your local county Extension agent
- Your local veterinarian
- Tennessee State University Extension Poultry Specialist (615-963-5823)
- University of Tennessee Extension Poultry Specialist (931-486-2129)
- C. E. Kord Animal Health Diagnostic Laboratory (615-837-5125)

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