A Pox On Your Chicken!

Recognizing avian pox

By Maurice Pitesky, DVM, MPVM, ACPVM

As an extension veterinarian I get several phone calls, emails, texts every week from poultry owners across the country describing their chickens' ailments in sometimes excruciating detail. (Note to the individual who took at least 15 minutes to describe each of their five chickens' personalities: Details are good, but let's try to make them relevant to the problem at hand.)

Anyway, although anecdotal, I have received a disproportionate number of calls that appear to be related to the avian viral disease, avian dry pox.

The typical scenario is an owner notes pink scabs (typically around 1 mm) or similar lesions across the comb, wattles, eyelids, and other non-feathered portions of the chicken's body (Figure 1). The lesions typically start as small blisters and progress to wart-like nodules and later become dry scabs. Owners may notice decreased appetite, some weight loss, and a drop in egg production.

Over the next two to four weeks the birds will typically recover with little or no mortality in the flock. While mortality or death is uncommon, from a production perspective the drop in egg production and/or the downgrading of the carcass due to the skin lesions can be a significant issue from an economic perspective.

The following are a list of common questions I get that are related to avian pox:

"Based on the description, what do you think it is?"

After explaining that I can't definitively diagnose what is wrong with their chicken over the phone—or even Skype—I explain that one reasonable diagnosis based on the clinical signs is avian dry pox. While the histological (i.e. looking at the affected tissue under a microscope) examination of the affected tissue is necessary for a definitive diagnosis, this is one of the few poultry diseases where the scabs and wart-like nodules described above are typically a strong enough clinical sign to diagnose the flock with avian dry pox.

While in the U.S. the most common form of avian pox is the skin form, it is important to recognize that there is a second, less-common form of avian pox called wet or diphtheritic avian pox. This is more severe and causes throat and upper respiratory tract lesions that usually begin as white nodules and may become large patches that appear as yellow masses or growths which can interfere with eating and drinking and result in death.

"How did it get into my flock?"

The virus is typically spread by either mosquitoes which gets the virus from feeding on an infected bird and then feeding on other birds in the flock, or by contact from an affected bird's scabs—which contain high levels of the virus—with an unaffected birds (i.e. inter-flock transmission). Also be aware that the virus can be carried as a fomite, so if you are picking at the scab and then pick up an unaffected bird you may transmit the virus unknowingly to that bird.

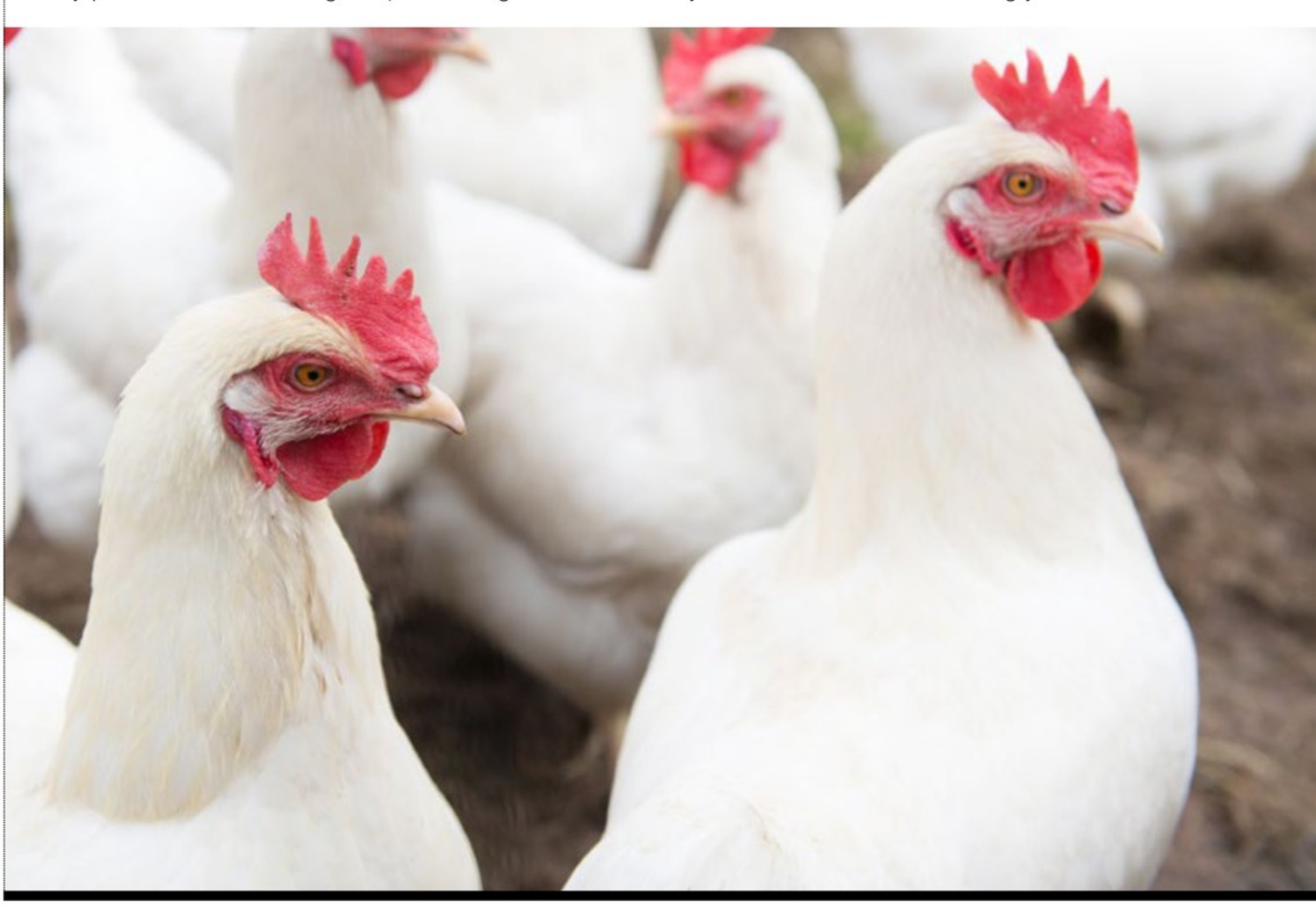

Figure 1: *Dry pox scabs on the comb. Similar lesions can form on the eyelids, comb, beak, wattle and other hairless portions of the chicken.*
(Photo: thepoultrysite.com).

"How do I get rid of it and/or protect my flock?"

Unfortunately, avian pox is a virus and as such is not treatable using medications including antibiotics. However, there is a vaccine and if you have a flock that has been previously affected by avian pox and/or if a neighboring flock has been affected, then you know that mosquitos in the area are most likely carriers of the virus.

In addition to focusing on mosquito control methods such as emptying any open water containers (i.e. gutters and other containers that collect water around your coop and yard area) to discourage mosquitoes from breeding, you should also consider vaccinating your flock against avian pox.

Because the disease typically spreads very slowly, you can vaccinate the unaffected birds during an outbreak. However, never vaccinate birds that are sick

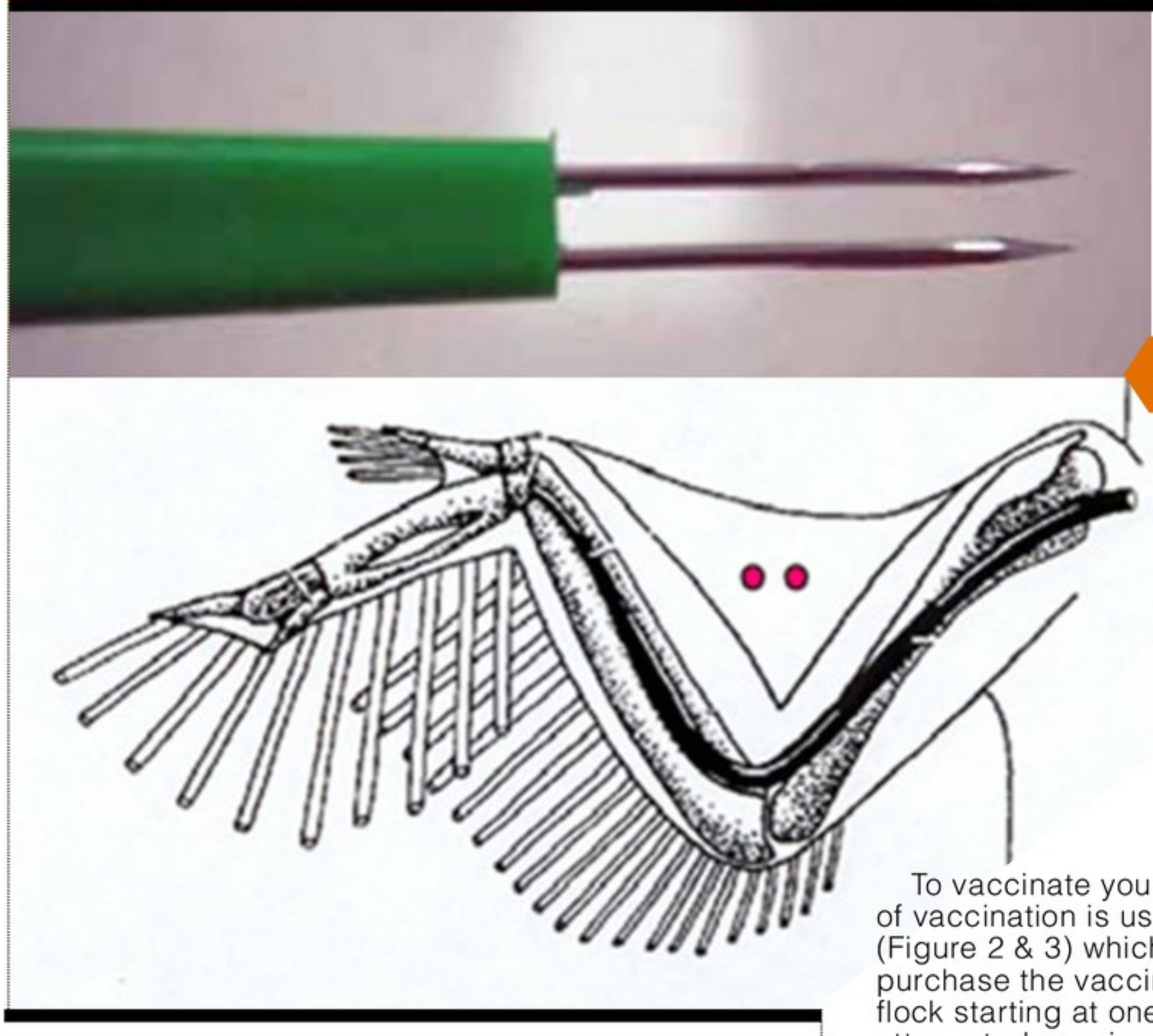

Figure 2 and 3: *Proper location and applicator for the administration of the avian pox vaccine using the wing-stick method. Note: A full dose of fowl pox and pigeon pox vaccines can be mixed together and given in one application via the wing web.* *(Photo: thepoultrysite.com)*

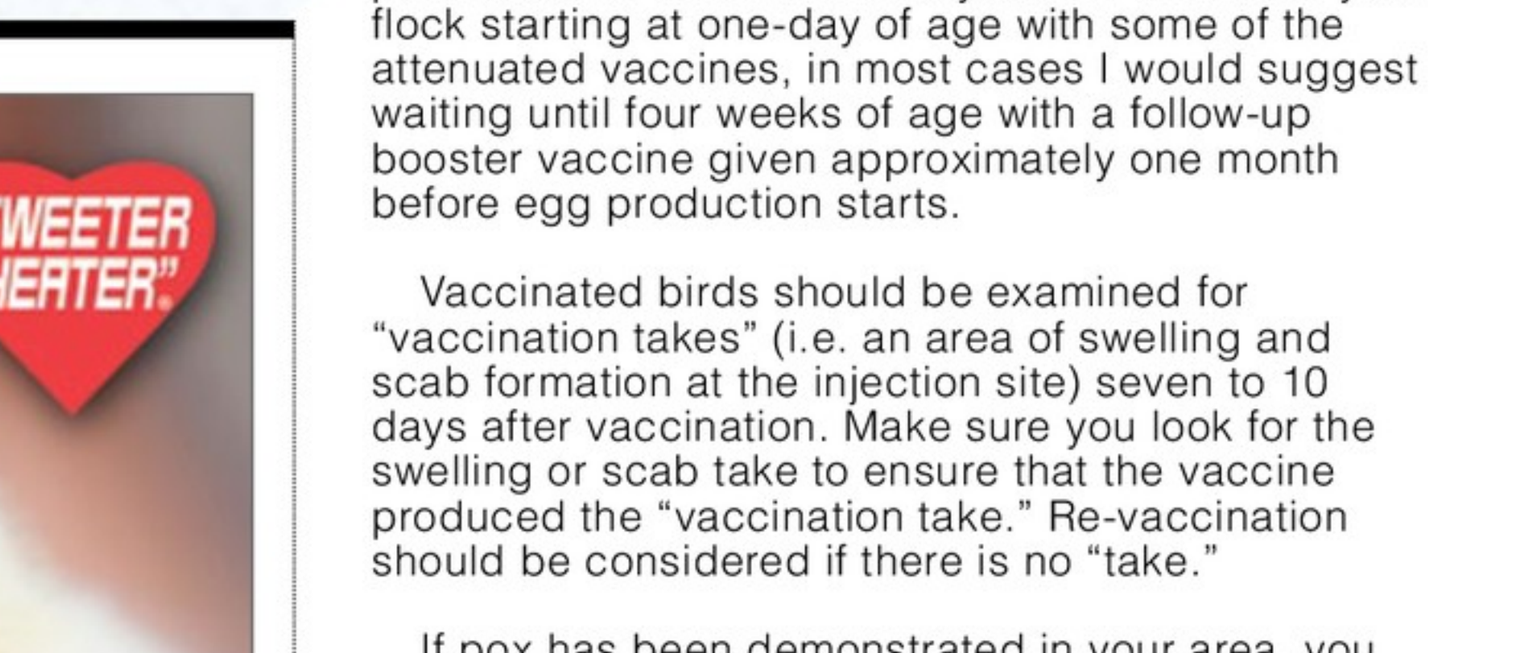

Figure 4: *Picture of a "take" in a vaccinated chicken. Look for the "take" 7-10 days after administering the vaccine via the wing-stick method. If there is no take, consider re-vaccination.* *(Photo: thepoultrysite.com).*

To vaccinate your chickens, a wing-stick method of vaccination is used using a two-needle applicator (Figure 2 & 3) which is typically provided when you purchase the vaccine. While you can vaccinate your flock starting at one-day of age with some of the attenuated vaccines, in most cases I would suggest waiting until four weeks of age with a follow-up booster vaccine given approximately one month before egg production starts.

Vaccinated birds should be examined for "vaccination takes" (i.e. an area of swelling and scab formation at the injection site) seven to 10 days after vaccination. Make sure you look for the swelling or scab take to ensure that the vaccine produced the "vaccination take." Re-vaccination should be considered if there is no "take."

If pox has been demonstrated in your area, you should consider vaccinating your flock annually. Ideally, this should be in the spring or summer in order to generate a strong immune response for the fall and winter which is typically when avian pox is most common. However, you may have a drop in egg production after the vaccine is given in laying hens. After all, when you vaccinate you are essentially producing a mild form of the disease in order to illicit an immune response.

To get adequate coverage against the different strains of the virus, consider using both the fowl and pigeon pox vaccines which can be mixed together and given in one application (Figure 2 & 3).

In addition to considering vaccination, be aware that the virus can persist in the environment (especially in the scabs). This is especially significant for operations which have mixed-age flocks since susceptible younger birds are often

placed with older birds in houses that have not been cleaned and disinfected.

Other important tidbits about pox

- Getting clinical signs of both the wet and dry is also possible. Interestingly, the disease may occur in either the dry or wet form since the same virus is responsible for both forms.

- The virus can cause disease in almost any avian species including pigeons, wild birds, turkeys, ducks, quail, pheasants, and all breeds of chickens.

- Fully recovered birds do not appear to remain carriers. This is in contrast to several other diseases such as Mycoplasma and Marek's where previously infected birds can be carriers for life.

- Pox is not zoonotic, meaning it does not cause disease in humans. However, there are other diseases that chickens carry that are zoonotic so always wash your hands after handling your chickens and any objects or areas they have come into contact with.

- Be aware that the vaccine is not always available. Contact your veterinarian and or feedstore for availability.

In summary, avian pox is a relatively common disease in many environments. Focus on the simple things first (mosquito control), talking to your neighbors to see if they have had avian pox in their flocks, and then consider vaccination if it makes sense.

About the author

Maurice Pitesky is a faculty member at University of California Cooperative Extension (UCCE) with an appointment in poultry health and food safety epidemiology. Pitesky earned his BS in biology from UCLA and his DVM and MPVM from UC Davis. Pitesky is also boarded in preventative veterinary medicine (DACVPM).