Marek's Disease in Chickens

Marek's Disease is by far one of the most common illnesses in small flocks and not treatable once the clinical signs have begun. Yet, it is one of the most preventable illnesses using vaccination.

Marek's Disease affects chickens and is caused by a chicken herpes virus. It will not make people sick. Like many herpes viruses, once an animal becomes infected, it will be infected for life. Not all infected birds, however, will get sick. The percentage of clinically sick birds in a flock depends on the strain of virus (some virus strains are more virulent than others) and the breed of bird. Leghorns and light egg-type breeds tend to be more vulnerable to disease than meat type breeds. Silkies in particular, are highly susceptible to Marek's Disease. The percentage of illness and death in a flock can be anywhere from 1% to up to 50%. The clinical disease is typically seen between 6 weeks to 30 weeks of age. But Marek's Disease can develop in older birds as well.

Birds become infected with Marek's Disease by inhaling virus-laden dander. While the virus is easily killed in its purified form, the virus can live for years in the dander. This means that once the disease enters a coop, the environment will most likely be contaminated for a very long time (months to years) even if all birds are gone.

Since infected birds are shedding virus, they will spread the disease as long as they are alive. If new, unvaccinated birds are brought into an infected flock, they will also become infected. This is especially true of young chicks that are highly susceptible. Even if new birds are quarantined away from the affected flock, caretakers can carry the virus-laden dander on hands, clothing, shoes, hair, and skin and spread the illness. One way that Marek's Disease is not acquired is through the hatching egg. Even if the breeders are infected, the chicks will hatch clean if they do not come into contact with the dander.

The symptoms of Marek's Disease depend on which tissues are attacked. In the classic form, Marek's Disease will cause inflammation and tumors in the nerves, spinal column, and brain. In this form, birds will become paralyzed in the legs, or wings or may develop head tremors.

Affected birds eventually die of starvation or are trampled or get severe sores on their body. They almost never recover from this.

Marek's may also cause tumors in the internal organs, the eyes, and even the skin. Affected birds lose weight, become emaciated, and die.
The best way to vaccinate the chicks is to have the hatchery vaccinate them. This is the preferable method if purchasing from a hatchery. If vaccinating at home, the vaccine handling must be done exactly as the label directs. This means following instructions on how quick to thaw, what temperature to thaw, and using the vaccine no longer than 1-2 hours after reconstitution (as indicated on the label.). As hardy as this virus is in the feather dander, it is a live virus that dies rather quickly in vaccine form. Unfortunately, once the vaccine is reconstituted, it must be thrown out after two hours. It cannot be stored for later use as the vaccine is no longer effective. The vaccine must be injected (usually under the skin) to work. This can be tricky with tiny chicks, so having someone hold the chicks and another to inject is helpful. Other steps to get the best vaccine protection is to be sure the brooder is clean and disinfected before placing the chicks. Again, keep all dander and debris from the older birds away from the chicks for at least a week.

Common misperceptions about Marek's Disease

1. **Mix turkeys and chicks together to prevent Marek's Disease so the chickens will be exposed naturally to turkey herpes virus.** This is not correct! Not only will the chickens not get Marek's Disease protection, but turkeys might be exposed to other common chicken diseases such as Mycoplasma and Blackhead.

2. **Don't vaccinate birds so that the survivors will become resistant.** Genetic disease resistance takes decades to develop and so far, has not been successful with Marek's Disease. If it were successful, one would think the commercial chicken genetic companies would have developed resistant chickens by now.

3. **Only vaccinate a few birds and the vaccine will leak and protect the other chickens.** This is incorrect. Every bird needs to get a full dose of vaccine before they become exposed to the actual disease-causing virus. This is the only way to achieve protection.

4. **Don't vaccinate birds because this vaccine is dangerous and might make the chickens ill.** If careful mixing of the vaccine in a sanitary manner is not followed, the birds may get a bacterial infection. Wash hands, use a sterile needle, and avoid touching the needle with hands or any soiled object. Use only commercial vaccines. The companies making these vaccines are testing for potency and making sure the vaccine does not become contaminated with other diseases.

Unfortunately, there are only a few companies and veterinary supply outlets selling single vials of Marek's vaccine to small flock owners. The individual vials contain 1,000 to 5,000 doses of vaccine. This vaccine arrives refrigerated with cold packs as it must never be allowed to warm up while in storage. If it arrives warm, it is no longer effective, and the seller should be called to get replacement product. The vaccine must be refrigerated until it will be used.
The other type of vaccine, which is frozen and kept in liquid nitrogen tanks, is available for hatcheries. However, this type of product is not practical for most small flock owners.

Photographs used with permission and obtained from the 6th edition of the Avian Diseases Manual and are the property of the American Association of Avian Pathologists.

Article created by Dr. Eva Wallner-Pendleton, DVM, MS, ACPV with assistance from Greg Martin (Extension Educator).

Authors
Eva Wallner-Pendleton, DVM, MS, ACPV
Clinical Associate Professor

definitions.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

This article, including its text, graphics, and images (“Content”), is for educational purposes only; it is not intended to be a substitute for veterinary medical advice, diagnosis, or treatment. Always seek the advice of a licensed doctor of veterinary medicine or other licensed or certified veterinary medical professional with any questions you may have regarding a veterinary medical condition or symptom.

© The Pennsylvania State University 2022

Code: ART-5543