

# The Importance of Preventing Common Chicken Diseases

## Tony Markley and Leigh Schilling Edwards

Recently, I had the misfortune to lose my entire adult chicken flock as a result of exposure to mycoplasma gallisepticum (MG) and mycoplasma synoviae (MS). So how could this happen? Did I not take adequate biosecurity precautions? Why did I have to have my entire flock of adult chickens euthanized? This story goes back to the acquisition of two cockerels.

### The Story

In early February, I was searching for a splash ameraucana rooster to pair with my black ameraucana pullet. I found one that had been hatched from eggs from a reputable breeder by a small-scale hobbyist. The hobbyist's flock appeared to be healthy and well maintained so I purchased this rooster and his brother. After keeping these roosters in quarantine for 3-4 weeks and not noting any problems, they were transitioned into my flock.

In early March, I began to note some respiratory problems with my layer flock. I cleaned out the coop and sanitized the area. The brother of the desired rooster failed to thrive and was abused by the rest of the flock. I culled him during the first week of March. During the second week of March the remaining acquired rooster was placed in the bachelor pen. Respiratory problems continued to spread and worsen over the next week even while administering medications in the water. I also noticed a new unpleasant smell in the coop and started to find some misshapen eggs in the nest boxes.

With concern for my flock growing, I began researching like a madman. I chased information in online veterinary manuals, and posted questions in online forums seeking any information that could give me a clue as to what was affecting my beloved chickens. Finally, I turned to the staff at the Virginia Department of Agriculture and Consumer Services (VDACS). I had taken my National Poultry Improvement Program tester certification class with them and recalled the sessions on poultry diseases.

On Wednesday March 23<sup>rd</sup>, I drove 2.5 hours to the VDACS State Veterinary lab in Harrisonburg, Virginia and delivered the splash ameraucana rooster and five of my sickest hens for euthanasia and subsequent necropsy. At this point, I was anxiously awaiting the results of the evaluation to determine the cause of the problem and whether my entire layer flock and bachelors pen would require further actions. I had learned enough from my research and discussions with the VDACS staff that I was not optimistic of a positive outcome.

Well, on Thursday afternoon, March 24, I got the word from the VDACS State veterinary lab that my chickens were positive for both MG and MS. Because MG and MS also significantly weaken the birds systems, infectious bronchitis and chronic respiratory disease had also set in. My chickens were completely healthy prior to the introduction of the two ameraucana roosters. Apparently, these two ameraucana cockerels had overcome their illnesses but were carriers for MG & MS and would be for life. While some chickens may recover from MG and MS and the disease can be managed by administering medications, once a chicken has had either MG or MS they will forever be a carrier of the disease. This means that any chicken you add to your

flock in the future will become exposed. Any egg that you produce for hatching will carry the disease organisms. Any chicken that you give away or sell will carry the disease to their new flock.

Once this diagnosis was confirmed, I knew that, for me, there was only one solution. If I intend to be a responsible breeder, I cannot knowingly sell someone else a chicken, chick, or hatching egg that could jeopardize their flock. There could be only one decision in my view. All exposed chickens would have to be culled.

So began one of the most emotionally wrenching, difficult things that I have ever had to do. I started the act of culling almost 50 chickens that Friday evening and finished Saturday morning. You can laugh at me but I do talk to my animals. I believe that animals are a lot smarter than people believe and I respect them. As I took each chicken to slaughter, I talked to them about what I had liked about them and my hopes for them. And I apologized.

I had many high quality chickens in my flock. Eleven of these chickens had been shown in the Virginia Poultry Breeders Association show on November 23, 2013. Included in my losses were: a BB/BV black Ameraucana cockerel, a RV black Ameraucana pullet, a BV blue wheaten Ameraucana cockerel, a BV wheaten Ameraucana pullet and a RV Ameraucana cockerel. I lost my BB Cream Legbar pullet that was my one true pure cream girl, the RB Cream Legbar cockerel, and a BB Basque cockerel. Lost, too, were my Swedish Flower Hens, my entire layer flock, and the residents of my bachelor pen. I had hoped that I would not lose my Cream Legbars since they were in a separate pen which was adjacent to the layer flock. But the odds were not with me. I also had to go through my incubators and dispose of all the eggs that had been laid during the exposure period. It is really hard to throw away eggs with active swimmers and those within a week of hatching.

MG and MS are very weak organisms. They do not have a cell wall as such so they are very fragile. Because of this fragility, they will not live outside a host for more than a few days. This fragility also works to the chicken owner's favor. Direct sunlight will kill the organisms as will most common disinfectants. Because these organisms do not have cell walls many antibiotics that are used to attack an organism's cell walls are completely ineffective. MG and MS are spread vertically and laterally. That is, it can be transmitted in hatching eggs, though direct and indirect contact from the movement of people, birds or materials from infected to uninfected birds and through respiratory aerosols. A list of references for more information is provided at the end of this article.



**Images are from The Merck Veterinary Manual**

As I noted earlier, with their systems weakened by the mycoplasma infections, infectious bronchitis was also contracted. The first clues I had on this was foamy mucous bubbles in the nasal areas and in the eyes. Infectious bronchitis can also profoundly affect the reproductive track of the hens and pullets. Egg production will drop dramatically and you will see misshapen eggs. This was the case with my flock.



**Image from The Merck Veterinary Manual**

During early-mid March when I realized that there was a significant problem in the flock, I purposefully identified the potential time frames of exposure with respect to eggs that were in the incubator, hatching eggs, chicks, and chickens that were sold. There was only one case in which I had sold hatching eggs that were potentially exposed. In this case, I contacted the buyer, advised her to throw away the eggs and refunded her money.

I also had several waves of eggs that had hatched and were in the incubator. These chicks were segregated from the sick flock and the waves of hatches were segregated from each other. Further testing of these chicks would determine whether they would become my new foundation stock or they would join their parents in chicken heaven.

If I lived in an area of the State of Virginia that was considered a major poultry producing area, VDACS would not just have given me recommendations. VDACS would have come to my place to cull the entire flock. The State of Virginia is very supportive of all poultry activities in the State, but their charter will not allow diseases like MG or MS to jeopardize commercial poultry operations. The financial toll would be devastating to a significant part of the State's economy.

I do appreciate the support that the VDACS provided. They euthanized, performed necropsies, and paid for some additional laboratory testing at no charge to me. On April 12<sup>th</sup>, VDACS came to my farm and tested every chick that I had. On April 16<sup>th</sup>, VDACS informed me that every one of my chicks were negative for MG and MS. I was very pleased that my efforts to identify the exposure time frames and the strict segregation efforts that I had imposed on these chicks were fruitful. My flock is clean and we are now free from this pestilence.

Sometimes it feels like you can do everything right and still suffer horrendous consequences. Yes, I am essentially starting over but those chicks that I hatched and was able to protect from the MG and MS are the future. They carry the genes from my "true cream" Cream Legbar hen and my best cockerel. I am also very grateful to for the support of my family, my customers, and friends through a really heart breaking time. I am also truly grateful for my "chicken friends" who supported me and provided me with hatching eggs to help recover and move ahead.

### **Lessons Learned and the Need for Biosecurity**

Under most circumstances a month would be plenty of time for an illness to rear its ugly head, but unfortunately birds can be carriers of certain avian diseases without presenting symptoms of that disease. Such is the case with MG and MS. How many times have we heard this kind story? But time and again, we hear people tell stories of introducing a new bird to the flock with virtually no quarantine at all because "biosecurity is just too hard to keep up with."

So please ask yourself – "Which is harder? Keeping up with biosecurity or losing every bird you have?" For the most part I have kept a closed flock. This means that I usually avoid acquiring older birds. Having made an exception because I did not want to wait for a chick to grow out to breeding age was costly, both emotionally and financially. Going forward, I will either hatch eggs or buy chicks from well established, recognized breeders who have impeccable reputations.

So - ask a thousand questions if necessary. Has the seller's flock has had any respiratory issues? How are the birds kept? Have any new birds been brought onto their property lately? If the seller does not share information freely, or if something sounds amiss, it may be wise to pass on the purchase. On one hand, I don't want to biosecurity seem too difficult nor do I want to come across as a zealous paranoid. But on the other, I don't want to withhold information that could cost anyone their flock.

### **Principles of Quarantining**

Most of us are familiar with the concept of quarantining. Essentially it involves having an area set up to segregate any new arrivals or any birds that may become ill. The principles of setting up a quarantine area are as follows:

- Create a quarantine area as far removed from your coop as possible. (This may be as simple as a dog crate in a garage that sets away from your coop.)
- This area should remain set up even if you do not plan on acquiring new birds.
- It should have its own feeding supplies and cleaning supplies - and for you; disinfectant spray, hand sanitizer and clothing that you will change in and out of as you come and go (and don't forget shoes!)
- Nothing – and I mean } [ c@ \* should be shared between your quarantine area and your coop. Ever.

### Revised Quarantine Protocol

1. Quarantine new birds by themselves for a minimum of 2-4 weeks, watching for any signs of illness.
2. If new birds show NO sign of illness after 2-4 weeks, place one or two of your own “sacrificial” chickens with the new birds or in adjoining cage where birds may touch and will share air.
3. Maintain this arrangement for another 2-4 weeks while watching the newly acquired and your own “sacrificial bird(s)” for any signs of illness.
4. If there are NO signs of illness at the end of this period, the new birds are \*probably\* safe.
5. If your sacrificial birds or the newly acquired birds become ill, have them tested and culled accordingly

There are no 100% guarantees when it comes to preventing avian diseases, but the above method is the simplest and one of the most effective for the average backyard chicken keeper.

Sure – it's a pain in the toot to scrub down and change your clothes just to visit or feed a new bird, but aren't your other birds worth the effort?

Likewise – if you have friends who keep poultry, do not allow them within 10 feet of your chicken yard. Sure – they may roll their eyes or even feel insulted, but you can always say, “I know how much you care for your flock, so I know you'll understand why I am so careful with mine. And I have this great article you can read if you're interested...”

### If You Suspect A Disease

**First and foremost, isolate any and all sick birds immediately!** If you already have a quarantine area, use it! If not, a box with holes cut in it will serve as a temporary cage until you can get something set up. Get the bird as far away from the rest of the flock as you can. Follow all quarantine precautions until you know with what you are dealing.



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There are tests for MG and a number of other poultry diseases. Contact your State's **Department of Agriculture** to find out about testing if you suspect it is something contagious.

If you find out one of your birds does have a contagious disease, stop all live bird and hatching egg sales until the disease has been dealt with. Some diseases can be cured and birds won't infect other birds once treated ... but you must be certain which disease you are dealing with if you regularly sell birds or hatching eggs.

\*\* If birds will remain carriers of this disease for the rest of their lives (as with MG and MS), either cull the bird (and any others that have come in contact with that bird), or keep a closed flock – do not knowingly sell these birds and cause harm to another person's flock! All MG and MS carriers should be culled and not sold or given away if you decide you can no longer keep them.

For more information on poultry diseases, see the links below:

- [ThePoultrySite Quick Disease Guide](#)
- [The Merck Veterinary Manual, Mycoplasma Gallisepticum](#)
- [The Merck Veterinary Manual, Mycoplasma Synoviae](#)
- [The Merck Veterinary Manual, Infectious Bronchitis](#)
- [Poultry Disease Diagnostic Tool](#)
- [List of State Departments of Agriculture](#)
- [Mycoplasma Gallisepticum](#)

- **Biosecurity - One Method of Introducing New Birds to Your Flock**

### **The Authors**

Tony Markley currently works for the U.S. Nuclear Regulatory Commission. I have 40 years of experience in the nuclear industry in many areas. I live in the very northern part of Virginia where Maryland, West Virginia, and Virginia come together with my wife of 35 years. We have three grown sons and a granddaughter. My experience with chickens comes from my childhood and then restarted two years ago. I have flock of egg layers and sell to neighbors and a farm-to-table restaurant. I am working with Cream Legbars, Swedish Flower Hens, and Jubilee Orpingtons.

Leigh Edwards is the chicken-crazy keeper of the Natural Chicken Keeping blog (<http://naturalchickenkeeping.blogspot.com>) and also blogs for GRIT Magazine when she can. A writer and researchaholic by trade, Edwards believes that everyone should have access to current and correct information on chicken health and management. If you have chicken keeping questions, please check out the Article Index on the Natural Chicken Keeping blog to find lots of well-researched and all-natural advice.

### **In Memorium**







