



Understanding Salmonella: Cause and Treatment

Salmonella is the genus name for a group of nasty bacteria which includes over 2,000 species. Salmonella organisms of different species are everywhere. When I was a kid, dime stores sold turtles until the turtles were discovered to carry some species of Salmonella. Eggs should be considered to always contain Salmonella.

Salmonella infections need to be divided into two groups, almost like two different diseases. The host adapted Salmonella tends to go throughout an animal's system, infecting organs and even causing pneumonia. The second form of Salmonella includes the vast majority of species, and stays in the animal's gut, mainly causing GI symptoms and severe diarrhea.

In humans, Typhoid is severely contagious and without treatment kills up to 25% of those infected. Typhoid is a human host adapted Salmonella. If humans get Salmonella from eating potato salad that sat in the sun all day, it is rarely fatal, but the Salmonella can be any one of hundreds of contaminating Salmonella.

In cattle, *Salmonella dublin* will kill a lot of animals, especially in youngstock. It is resistant to most antibiotics, very contagious, and animals that recover can be reservoirs for weeks or longer.

Monty has had some interesting Salmonella cases. In one case, a farmer harvested winter rye and put it in a pile, no packing, and fed it immediately after the pile was formed. He used his manure bucket on his tractor to help form the pile. In less than a week, every cow in the barn looked like it had winter dysentery, manure arching all the way across the back walk to the far gutter. Every single cow. I don't remember if it was treated with antibiotics, it probably didn't matter, but the diagnostic lab grew Salmonella from the rye on every cow sample Monty sent in. Salmonella had become the predominant bacteria growing off the sugars in the fresh rye. A few of these bugs in the cow feed and there would be no problem, but there were billions in every mouthful of feed.

In another case, Monty cultured a bull a farmer purchased from Canada because of chronic diarrhea. The diagnostic lab called to say they isolated a *Salmonella* species, something like JuJu that had never been diagnosed in cattle. But 4 months later they called to say the bull had Johnes's, which made sense because it still had diarrhea, and the Salmonella was only there because of the Johnes's damage to the bull's gut. It was probably some Salmonella from lightening bugs or something.

The take home is that Salmonella is approached differently if it is host adapted or a contaminate. If cattle get *Salmonella dublin* or host adapted, isolation and vaccines and special groupings are used to try to control. If cattle get non-host adapted Salmonella, we look for a source and we really get aggressive with sanitation. When we see dirty calf feeding equipment, dirty mangers, spoiled and poorly handled feed, in the back of our minds red flags pop up.

Mark Sosalla had a recent case of fresh cows getting diarrhea. The automatic waterer was disassembled and cleaned, then cultured at the same time. Salmonella was growing in the waterer. We've cultured salmonella out of dirty water sources multiple times. I've even seen it in a home water system with well water contamination.

FDA Bans Sale of Antibiotics at Feed Stores

Effective June 11, 2023, the FDA has banned all antibiotic sales over the counter for food animal use. That means penicillin, LA 200 and mastitis treatment tubes are no longer sold in stores like Fleet Farm or Tractor Supply.

In order to purchase those products from the clinic you must be an established client.

Memories of Hunting with Dr. Monty over the Years

One of the first times I took my new associate Monty pheasant hunting, it was a beautiful fall afternoon. This was back when there were wild pheasants in Dodge County, and we were on Dan Smits farm near where Dr. Ralph lives today. Monty had a young dog, Molly, and she flushed a rooster between us. Monty shouldered the gun in a heartbeat as the bird banked up heading over me. Prudently I dropped flat on my back on the ground and heard the gunshot. I felt like a little kid looking up at blue sky with puffy white clouds and naming imaginary shapes, except drifting down on top of me were pheasant feathers. Lots of pheasant feathers. At 20 feet and a moving target, Monty is a good shot. Molly brought back two legs with the tail attached.

He did almost the same thing a couple years later in South Dakota when he was a quarter mile from me. A friend and I flushed a bird, and missed it multiple times, and watched as it flew straight at Monty over a marsh. Straight at him, and we watched and waited and waited. At that distance we weren't certain of depth perception, but Monty just stood there facing us and suddenly he fired. Dead-on at 15 feet. Again, feathers in the wind and Molly retrieved a wing. In 55 years of pheasant hunting in six states I've never seen a bird blown apart before.

Earlier that fall, I had taken Monty to Philips grouse hunting, and we were one bird short of our limit as we headed home. Driving south from Plainfield we decided to stop along a trout stream where I had shot a few grouse in the past. Monty was some distance away when I heard a shot. I headed over with my dogs, but they couldn't find the bird. Monty insisted it was in a spot right along the streambank. I happened to look down and there it was, a flicker. My dogs had no experience retrieving woodpeckers.

Another afternoon at Germania Marsh, I was driving an old pickup down a potholed dirt road when my muffler pipe broke and the muffler was dragging on the ground. I climbed under the pickup and tried to leverage back and forth the inch of metal keeping the muffler attached to the truck. Finally, I asked Monty for a pocketknife, which he handed to his then new boss.

It was a nice knife, good steel too, because I was able to cut through that inch of muffler pipe and we threw the muffler in the back of the truck. It wasn't the best steel though, because he claimed he could never get an edge back on the knife.

You would think he would learn, but in South Dakota a couple years later we were in a cattail marsh with fresh snow. Roosters were breaking out around us, and Monty was shooting steel shot. He was hitting birds, but the shells wouldn't finish the job. I was shooting some high-priced tungsten shells that are better than lead but the first one misfired and jammed the wad in my barrel.

I asked again to borrow Monty's knife and he obliged. The dogs kept flushing roosters around us and we were in a panic. I wedged the wad out of the barrel and broke the end of the blade off. Monty was freaking out but I calmed him down handing him a handful of tungsten shells which he used to shoot the next three roosters.

But you would think he would have enough sense to bring a junk knife when he hunts with me.

Reminder on blood collecting tubes

There are two types of blood tubes, a purple top and a red or red and grey top.

The purple top has an anti-clotting product in it, with the red top we want the blood to clot. If you are collecting in a purple top, as soon as you get the blood in the tube, gently rock, not shake, the tube back and forth a half dozen times. This mixes the anticoagulant.

Be sure to bring the right blood tube sample into the office. For example, we can't run calcium and phosphorus with a purple top tube sample. If you are not sure, call the lab or the vet on call before you take the sample.