



When in Doubt – Find Out!

The Importance of a Post Mortem Examination

"Where there's livestock, there's deadstock". It's a saying that all farmers are familiar with – an unfortunate

reality of the cattle business. But just because death does occur on a farm, doesn't mean we cannot, and should not, learn from the situation.

I was recently called to a farm to investigate after a well doing, 600lb, home-raised steer calf died suddenly overnight. This was the second animal that had died in just three days and the owner was baffled, and understandably frustrated. A strong wind and rain storm had blown large amounts of bale wrap into the pens and he was concerned that these calves had ingested a large enough quantity to cause an impaction and blockage, leading to death. I found this explanation plausible, but I was skeptical.

I offered to do a post mortem examination – a quick and dirty exploration of the inside of the carcass to try to determine the cause of death. Given his initial concern regarding the bale wrap, I started my investigation in the abdomen. The calf had a full rumen with normal feed content. There were no blockages throughout the stomach or intestines and all other abdominal organs appeared normal. This ruled out the bale wrap theory, so next I opened the chest cavity. One quick glance gave me the answers I needed to determine cause of death. The lungs were deep purple in colour, firm and tough to cut – a stark contrast to the usual pink, light, airy lungs of a normal animal. This calf died of pneumonia.

I suspected a viral agent as the cause of the pneumonia and further testing of the lung tissue identified bovine respiratory syncytial virus (BRSV) as the culprit. Determining a cause of death and the agents involved allowed us to develop a plan of attack for treating all of the other susceptible calves in the barn, and to implement a vaccination program to prevent

this from happening again in the future. Total cost of the farm visit and the lab testing was less than \$350 – a mere fraction of the costs associated with losing two calves, and potentially more, had the issue continued to go unaddressed.

Post mortem examinations are essential for all disease outbreak investigations; and many veterinarians would agree, for all animals that die on farm. They are needed to accurately determine the cause of death and just as the situation above illustrated, appropriately plan to treat and prevent. A post mortem allows your veterinarian to provide more definitive and detailed answers to the problems being

faced and leads to better outcomes for the animals and the farm. It can be done on your farm within 30-60 minutes and usually requires only one person. Once done, the carcass is still able to be picked up by dead stock rendering, unless the brain or spinal canal have been entered (which occurs very infrequently in a normal post mortem investigation), or it can be composted or buried on farm with very little mess.

Each veterinarian will have his or her own technique to performing a post mortem exam, but just as a physical exam on a live animal occurs, it will be done strategically and systematically so that nothing is overlooked. A complete exam will include the carcass evaluation, in addition to collection of an accurate history and an examination of the environment and other animals that may be affected but have not succumbed to death.

Having an accurate and complete history of the animal and its disease progression will help to steer your veterinarian's investigation and lead to a more precise diagnosis. A thorough description of clinical signs, treatments given and procedures performed is required. Your veterinarian will also have knowledge of the most common causes of cow and calf mortality and awareness of issues that are affecting other farms at any given time.

No special tools are required, but for best results, a post mortem should be performed as quickly after death as possible because tissue changes and bacterial overgrowth start to occur, and can sometimes prevent an accurate diagnosis. For example, within two hours after death, bacterial overgrowth in the stomach and intestines has magnified so significantly, that isolation and culturing of the causative agent might not be possible. Your veterinarian will often collect various tissue samples to send away for further testing through an external laboratory where the tissues can be analyzed using intricate microscopic techniques. It is here that a certified pathologist can comment on the histological tissue changes and how they relate to most likely causative agents and disease severity, providing even more useful information for the investigation.

Death is inevitable, but learning from the event by having as much information as possible, and making changes to prevent its unnecessary occurrence in the future is not. And remember, we miss more because we do not look and not because we do not know. **OB**

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