

Diagnostic Necropsy: Making the Best of a Bad Situation

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The death of an animal is often viewed as an endpoint and the return on investment required to investigate the cause is not readily apparent. Much can be gained by systematic investigation of death losses in a herd and in the long run this investment will save money. Routine investigation of death losses has several advantages. First, identification of the disease process is mandatory if rational treatment or management recommendations are to be made. The appearance and symptomatology of a variety of illnesses are remarkably alike, despite being caused by a variety of different agents. The most effective (and ultimately, most cost-effective) treatment interventions and preventive strategies require identification of the causative agent. Second, investigation of a death takes time, often as much as a few weeks if viral isolation or other laboratory work is required. Prompt investigation of every death loss provides a head start in those cases in which a disease is emerging in the herd. Waiting for the third or fourth death loss to start an investigation puts you behind from the start. During the time you are waiting for identification of a causative agent, you will be spending money on veterinary services and broad-spectrum? therapies which may or may not be appropriate or effective. Third, investigation of each death loss provides a snapshot of the disease agents active in the herd and allows rapid and appropriate response to emergence of new disease agents.

To illustrate these points lets use an example of an outbreak of diarrhea in repalcement calves. This is a common problem with multiple causes. Let us say your dairy lost several calves some years ago and you had one post-mortem examination performed. An agent was identified and a treatment or management protocol developed for diarrhiac calves at your farm. What happens when a new disease agent emerges? In most cases you will not be able to recognize this as a new disease by just looking at the calves. How many calves do you loose before you recognize that these calves have a different disease?

What can be done if you find yourself in this situation? You should submit the next death for investigation while the carcass is still fresh, however many times veterinary intervention is requested at a time when a fresh carcass is not available. A good sample for diagnosis is a sick but not yet dead animal which is euthanized and presented fresh for post-mortem examination. The decision to euthanize a live animal is difficult to make, however in most cases if you were going to save the sick animal you likely would have saved the others as well. Once the decision has been made to pursue elective euthanasia, the animal should be selected carefully. The ideal candidate is an animal which has recently shown signs of the disease but is clearly following along the course observed in previously affected animals, is of the same age and production class as others affected, and became ill during the same time period. It is best if the chosen animal has not yet been treated for antibiotics often limit the ability of the laboratory to isolate pathogenic bacteria. This is true even in those cases in which therapy has failed. To gain the maximum benefit from any post-mortem examination, you should provide key historical features to your veterinarian. These include: age, production cycle, general management scheme employed for affected animals, number affected, symptoms, duration of disease course, and attempted therapies.

Routine investigation of death losses is one of the most under-utilized but cost effective uses of veterinary services. Think of the practice as analogous to vaccination. Vaccines allow animals to recognize a pathogen and prepare them to respond rapidly and effectively to subsequent infection. Examination of each death loss results in knowledge (agent recognition) that can be used to prepare a response to limit future losses. The process of recognition is critical and recognition of disease conditions in your herd is best acquired by serious investigation of each death. Prevention(or in this case, preparation for prevention) is the best medicine.