Musculoskeletal Disease in Stocker Calves

Terry Engelken – MSU College of Veterinary Medicine

As we try to evaluate animal health performance in stocker operations, it is helpful to classify disease based upon the organ system that is affected. This classification system can be as simple or detailed as you want it to be. However, since I'm a Kansas State graduate, I pretty much have to keep things as simple as possible! Normally when we begin to classify disease, we break it into five broad categories: Respiratory, Digestive, Nervous ("brainers"), Musculoskeletal, and "Other". While these categories tend to be pretty self explanatory, the "Other" classification tends to be a place where we put those animals that don't fit any place else. For example, cases of "pinkeye" would fit in the "other" category. This classification may be made when the animal is originally pulled or it can be based on necropsy results. If you are having necropsies performed, this represents a good way to see how well your original diagnosis and treatment matched up with what actually killed the calf.

Musculoskeletal disease refers to any condition or abnormality associated with bone, joints, muscles, or skin. While we do see the occasional skin condition or "blackleg" calf, the most common losses associated with this classification result from some sort of lameness. This lameness may be due to infectious causes or it may be brought about by how the calves are transported or handled. I have seen instances where protruding nails, wire, or sharp metal objects in the "snake" have resulted in multiple calves getting injured and then becoming chronically lame. The floor of your squeeze chute should be closely inspected on a weekly basis to make sure it is in good repair.

Cattle temperament will increase losses associated with this category since calves with poor disposition will tend to hit gates and fences at a higher rate of speed. Pushing the calves too rapidly through tubs, alleys, and squeeze chutes will increase the number of shoulder and neck injuries. Proper maintenance of cattle handling facilities, quiet handling, and a well trained crew will go a long way in preventing losses associated with musculoskeletal injuries.

When looking at the common infectious (due to bacteria) causes of lameness, there are several that we typically deal with. Conditions such as "foot rot", toe abscesses, and infectious arthritis tend to make up most of these cases that fall into this category. These cases will require antibiotic therapy if the animal is going to recover and be marketable. However, without timely intervention, the bacteria can become very well established and respond very poorly to treatment. Then it becomes very frustrating to watch these individuals become chronically lame regardless of how you treat them.

When it comes to "foot rot" there is not much that has changed over the years. The organism that causes this disease is always present between the toes of the animal and just waits for some break in the skin. This allows it to move into the deeper tissues and cause swelling and lameness. Without treatment, it can affect the underlying joints and bones of the foot and cause severe damage. The good news is that most of the antibiotics on the market will be effective in treating the early cases.

Toe abscesses tend to be caused when calves are moved across rough surfaces, such as concrete, asphalt, or even sand. The faster the animal is moving over these rough surfaces, the more likely we are to see damage to the foot. This can also occur as the calves slip and struggle to maintain their balance coming into the chute or if the concrete leaving the chute is very rough. The rough surface wears through the sole of the hoof at the tip of the toe. This allows bacteria to gain entrance to the deeper tissues and once the toe heals over, an abscess is formed. These lesions are very painful for the animal. In order to treat these, you need to clip off the tip of the toe to reestablish drainage and give the calves an effective antibiotic. You also must address the underlying cause of having the calves moving to quickly across rough surfaces. If the surfaces can't be smoothed, rubber flooring mats made out of woven car tire tread can be placed over the area.

Infectious arthritis in cattle will often start as an infection someplace else in the animal's body. The bacteria will then travel through the bloodstream to one of the joints and set up there. When you see multiple cases of swollen joints in cattle following an outbreak of respiratory disease, we tend to think about organisms such as *Mycoplasma* or maybe even *Histophilus* (used to be called *Haemophilus*). These cases can be very disappointing in their response to treatment. Often we are faced with multiple treatments over a fairly long period of time. In many of these cases "tincture of time" is the only cure and often then it is some sort of salvage. While we may not see many of these arthritis cases, they are very expensive because of the treatment cost, the feed intake of the animal, and their relatively low value when treatment has ended.

When it comes to musculoskeletal disease in your calves, we need to remember that not all lameness should be classified as "foot rot". While lame calves may require antibiotic therapy to recover from a bacterial infection, we need to get a better understanding as to the reasons why we have that initial insult that set up the infection. Problems that are set up by rough surfaces, sharp metal objects, or rough handling won't decrease over time if our only answer is another round of antibiotics. Our industry is also becoming more responsive to animal welfare issues and musculoskeletal injuries would certainly fall in line with these concerns. By monitoring the number of musculoskeletal cases you are seeing and using timely intervention, you should be able to control losses in this area. For more information about stocker cattle production, contact your local Extension office or veterinarian.