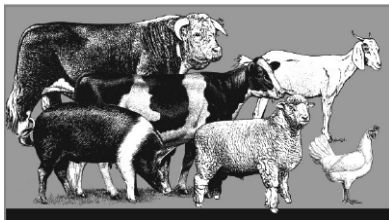


Foot Rot in Cattle

Christine B. Navarre, DVM

Foot rot is an infection of the soft tissues between the toes (interdigital space) of the feet in cattle. Foot rot can affect one or more feet and cause mild to severe lameness. It impacts weight gains in growing cattle and milk production and reproduction in adult cattle. If left untreated, foot rot can spread to the deeper structures of the foot, such as the joints and tendons.

The occurrence and prevalence of foot rot in pastured cattle can be unpredictable and varies from year to year, depending on weather and pasture conditions. It is seen in both excessively wet and dry conditions and increases with crowding and mineral deficiencies (copper, iodine, selenium and zinc). Anything that weakens the skin of the foot allows the bacterium *Fusobacterium necrophorum,* which is abundant in the environment, to invade and cause infection. Heat, humidity and standing in wet, muddy conditions are commonly to blame, but damage during dry conditions is often overlooked as a cause. Walking on rough, uneven surfaces (dried mud holes with deep hoof impressions) or grazing recently mowed grass and weed stubble can also damage skin and lead to foot rot.

Clinical Signs

Foot rot presents with the following signs:

- Sudden onset of mild to severe lameness.
    - Can affect one or multiple limbs, front and/or back feet.
- Symmetrical swelling of the lower pastern around the hairline and coronary band of both digits (Figure 1.).
    - The swelling may lead to increased separation of the claws.
- Ulcerated cracking of the skin in the interdigital space with a foul odor (Figure 2.).
- Decreased feed intake.

Figure 1.*

Figure 2.*

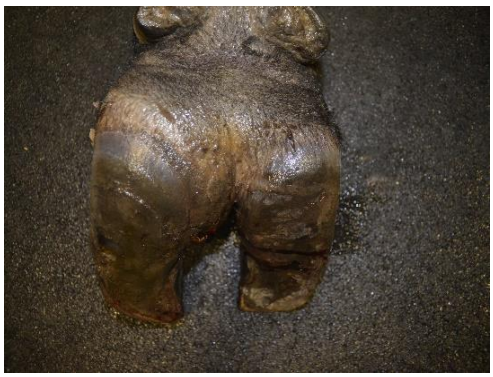
Diagnosis

A careful diagnosis is necessary to treat cattle properly and promptly. Greater than 85% of lameness in cattle originates in the foot, but it is not always foot rot. ***Symmetrical*** swelling of the lower pastern area (hairline to dewclaw) is a hallmark of foot rot. Confirmation of a diagnosis is made upon seeing the ulcerated interdigital space. This can be difficult to see unless the foot is picked up or the animal is restrained on a tilt table or cast/tranquilized in the field.

Other common causes of foot lameness either have no swelling or ***asymmetrical*** swelling (Figure 3.). Hoof-wall cracks, sole ulcers and subsolar abscesses can also cause acute lameness but are unresponsive to antibiotics and require hoof trimming and/or paring. Infections of the bones, joints and tendons may require prompt medical and/or surgical intervention.

Delaying proper diagnosis and treatment can have serious and potentially life-threatening consequences. If left untreated, foot rot may progress up the foot to the fetlock and affect the deeper structures of the foot, such as the navicular bone, coffin joint, coffin bone and/or tendons. Administering antibiotics to "wait and see" if the lameness responds will delay proper treatment for other causes of lameness that need trimming or surgical intervention. This may allow problems to progress to the point of no return where salvage or euthanasia is necessary. Salvage will be delayed if antibiotics were given unnecessarily.

Figure 3.*



Treatment

If possible, the ulcerated area should be cleaned with soap and water and then a topical treatment can be applied. An injectable antibiotic and pain medication approved specifically for foot rot should also be administered. Only products approved for foot rot should be used as recommended by the herd veterinarian. Keep affected animals in a dry area until healed. If there is no improvement in three to four days, re-evaluation for infection of deeper tissues is necessary.

Prevention and Control

Prevention and control of foot rot involve management of the environment and maximizing hoof health. Areas around ponds and feed and water sources should be maintained to minimize mud and manure buildup. Minimize exposure to dried mud, sharp plant stubble and sharp gravel. Optimizing nutrition, especially trace minerals, can improve overall hoof and skin health.

Foot baths are sometimes used in confinement beef or dairy operations but are impractical for most cow-calf operations. A commercial foot rot vaccine is approved for use in cattle, but there is little research to warrant its use. It may decrease the number and severity of cases but is not a standalone preventive measure. The FDA's Veterinary Feed Directive prohibits feeding chlortetracycline (CTC) for foot rot as is not labelled for this indication.

Conclusion

Lameness in cattle can be a source of significant economic loss to an operation. It is imperative that a rapid diagnosis of lameness is made to ensure the welfare of the animal is not compromised. Consultation with your herd veterinarian who understands challenges on your operation is always a sound investment that will help prevent future production losses associated with lameness.

Christine B. Navarre, DVM, MS, LSU AgCenter and Chance Armstrong, DVM, MS, LSU School of Veterinary Medicine

July 2020

*Photo credits: Figures 1 and 2 Dr. Dacques C. Pourciau, Maurice Veterinary Clinic; Figure 3. Louisiana Animal Disease Diagnostic Laboratory