



Beef Cattle Handbook



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Infectious Footrot of Cattle

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Footrot is an infectious disease in cattle that is characterized by lameness, and the inflammation of soft tissues between the hooves (interdigital space). Among the several synonyms for the disease are interdigital necrobacillosis, foul foot, and necrotic pododermatitis.

Footrot is caused by soilborne bacteria *Fusobacterium necrophorum* and *Bacteroides melanogenicus* that gain entrance to the interdigital tissues after injury to the skin. The predisposing injury to the skin is usually caused by trauma from stepping on stones, straw or hardened mud, or continuously standing in a wet muddy environment, which may soften and macerate the skin. Occasionally footrot occurs when no obvious interdigital trauma can be found.

Clinical Signs

In the acute phase there is usually a sudden onset of mild to severe lameness in one or more limbs. The interdigital soft tissues are swollen and painful, and frequently cause the claws to spread apart. In more severe cases the swelling spreads up the leg to involve the coronet, pastern and fetlock regions. In early stages there is a fever (103° to 106°F) and a loss of appetite. As the disease becomes more chronic, the interdigital space becomes fissured and imparts a foul odor. In protracted cases the infection will frequently involve the pastern and fetlock joints to produce a septic arthritis (pus in the joints).

Epidemiology

Infectious footrot is a common foot lameness in cattle. It occurs year round but the prevalence is higher in the wet

seasons. All breeds and all ages of cattle can be affected, although the youngest (3 to 24 months of age) are most susceptible.

The disease is most often a sporadic problem that will affect only 1 or 2 animals in any population. However, it can occasionally reach epidemic proportions of 10 to 15 percent. The disease is not fatal, but animals may be culled because of severe lameness particularly in chronic cases that have involved the joints.

Treatment

Systemic sulfonamides and/or antibiotics usually promote rapid healing in early acute cases. Long acting oxytetracycline (9 mg/lb.) intramuscularly or procaine penicillin (20,000 IU/lb./day intramuscularly) are effective treatments. Sulfa drugs such as sulfadimethoxine (25 mg/lb. initially then 12.5 mg/lb./day administered orally or intravenously) are also effective in treating acute cases.

In more chronic cases it is often necessary to clean the wound, apply local antiseptics or antimicrobials, and bandage the foot in conjunction with systemic therapy to hasten recovery. If joints or tendon sheaths are involved, the prognosis for recovery is poor and surgery to remove an affected claw may be the only option.

Prevention

Good hoof health is of maximum importance. Clean yards that are free of sharp objects such as stones or glass or frozen, muddy, rough ground will aid in preventing hoof injury and infection. Covering frozen ground with straw may also be helpful in preventing foot injury.

Many of the problems of footrot can be avoided by thoroughly cleaning pens after cattle are removed and liberally spreading lime over the pen surface. Leaving the pen vacant for at least a week after liming will contribute to the control of footrot organisms. Maximum drainage is an absolute essential to any feedlot arrangement and will aid in preventing the constant contact with manure-laden mud or water.

One of the most common preventive measures used in many feedlots is building mounds of soil or bedding. Mounds should be of adequate size to allow for comfortable standing and arranged so that they receive maximum exposure to the sun. Concrete slabs placed in the lots can aid in providing a dry area for cattle to stand. The use of concrete around water fountains and feed bunks where animals frequently congregate are most helpful in preventing contact with extremely wet, muddy conditions.

Spreading of lime with 5 to 10 percent added copper sulfate around watering units and feed bunks may be helpful in preventing footrot. In some instances, the use of walk-through foot baths containing 30 percent solution of copper sulfate with shavings in the bottom to prevent slippage, or walking calves through a box of lime with 10 percent copper sulfate or 10 percent zinc sulfate has been used to medicate or prevent footrot. Though effective, these procedures are cumbersome and inconvenient in most feedlots.

Good nutrition may be helpful in preventing footrot. All calves should be adequately provided with calcium, phosphorus, and vitamins A and D. Supplemental sources of zinc at levels of 30 to 40 ppm of the total diet has also been used to prevent footrot. However, zinc deficiency has not been shown to have a causal relationship.

Recently, a *Fusobacterium necrophorum* bacterin has been marketed for the control and prevention of footrot. Although a degree of efficacy has been shown

(64 percent reduction of cases was observed when vaccinated cattle were compared to nonvaccinated controls), total reliance on vaccination for control is probably unwise. The bacterin should be used in conjunction with other time-tested preventive measures, such as maintaining good hoof health.

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