

# Foot Rot In Beef Cattle

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Foot rot is an acute infectious disease of cattle characterized by swelling and lameness and is a major cause of lameness in beef cattle. The condition can become chronic if treatment is not provided or delayed, allowing other structures of the foot to become affected.

## Etiology

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*Fusobacterium necrophorum* is the causative organism of foot rot but other bacteria also have been implicated to work synergistically with *F. necrophorum*. However, the organism cannot penetrate intact, healthy skin. Damage to the interdigital space from continual wet skin or abrasions from rocks, stubble, or frozen/dried mud allow the bacteria to invade and cause disease.

## Epidemiology

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The disease is seen year round, but the prevalence is usually higher when pens are wet and muddy. Pen conditions can be particularly severe when ground alternates between wet mud and manure to frozen clods can be particularly severe. Although all ages are susceptible, the disease is most commonly seen in cattle of weaning age and older. Morbidity can vary from one or two animals affected in the herd to large outbreaks of over 25 percent affected.

## Clinical Signs

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The first sign of foot rot is sudden lameness in one or more feet with swelling of the interdigital space and coronet. There is usually a separation of the claws due to the swelling in the interdigital space. Examination of the foot will reveal cellulitis and liquefactive necrosis in the interdigital space that has a foul odor. Typically, cattle with foot rot will raise the affected limb off the ground while standing, will be reluctant to move, and will have a reduced appetite. Often the animal will have a low grade fever. If the disease is allowed to progress, the infection will invade deeper tissues of the foot and can lead to chronic arthritis.

Diagnosis of foot rot is made by observation of the animal and careful examination of the foot. Differential diagnosis includes foreign bodies (nails or wire), hairy heel warts, corns, toe or sole abscesses, or a fracture of the bones of the foot.

## Animal Welfare

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Foot rot is a very painful condition resulting in moderate to severe lameness. In severe cases, owners may consider the addition of an anti-inflammatory to the initial therapeutic regimen. Owners are encouraged to seek the advice of a veterinarian for complicated cases for which surgical intervention may be indicated.

## Treatment

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Early administration of systemic antibiotics usually results in rapid healing. Historically, penicillin, oxytetracycline, and/or sulfonamides have been used successfully. Newer antimicrobials such as ceftiofur, florfenicol, and tulathromycin also have been approved to treat foot rot. Owners should consult a veterinarian regarding the best treatment option for the situation. Local treatment consisting of cleaning and debriding, antiseptic dressing, and a bandage can be utilized but is often not practical.

Severe or advanced cases that involve adjacent tendon sheaths, joints, and/or bones require more drastic treatment. If only one claw is affected, surgical amputation may be indicated. Although cattle can function well with one claw in the short term, amputation is usually considered a salvage procedure.

## Prevention

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Environmental hygiene is a key component in preventing foot rot. Preventive measures include minimizing abrasive surfaces and wet areas, especially around feeding and watering areas. Lots should be well drained and manure removed regularly. Concrete slabs along feed bunks and water tanks will reduce muddy conditions in areas where cattle spend a lot of time. Mounds of soil or composted manure can be utilized to promote drainage and provide cattle a dry place to lie down.

Good nutrition is important in maintaining healthy feet and skin. Vitamin A is essential for health of skin cells. Organic iodide can reduce the incidence of foot rot and can be included in salt or feed mixes at label doses. Zinc has been used to treat and prevent foot rot, but the mechanism of action is unclear. There are vaccines approved for prevention of foot rot but cost effectiveness has not been established. However, it is generally recommended that bulls be vaccinated because the cost of vaccinating individual bulls is less than an entire herd or lot, and the potential negative impact of a lame bull during the breeding season is tremendous. Footbaths have been used for sheep and dairy cattle but are usually impractical in range or feedlot conditions.

## References

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