Foot rot

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|  Footrot is a sub acute or acute necrotic infection originating from a lesion in the interdigital skin that leads to a cellulitis in the digital region. Pain, severe lameness, fever, anorexia, loss of condition, and reduced milk production are major signs of the disease. Footrot has a worldwide distribution. The incidence varies according to weather, season of year, grazing periods, and housing system.  |

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| ETIOLOGY*Dichelobacter (Bacteroides) nodosus* is the essential causal pathogen. *Fusobacteriumnecrophorum* is considered to be the major cause of footrot. It can be isolated from feces, which may explain why control is difficult.*F. necrophorum* aids *D. nodosus* in the invasion of the foot and contributes in the inflammatory reaction.Other organisms, such as *Staphylococcus* *aureus* , *Escherichia* *coli* , *Arcanobacterium (Actinomyces)* *pyogenes* , |
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|  **EPIDEMIOLOGY**1-Foot rot is common in all countries, and in all age2- sheep, goat, cattle, dear are susceptible  3- The source of infection is discharge of bacteria from the active or chronic infection in the feet of affected animals.4-Conditions of wetness and warmth favor persistence of the bacteria in pasture and increase susceptibility of the feet to injury and dermatitis, thus facilitating spread of the disease from carrier sheep5-Foot rot is commonly associated with lush or improved pastures, irrigated pastures, and clover-dominant pastures. Long mature grass may result in interdigital abrasions as it is dragged through the interdigital space and facilitates infection.PATHOGENESISInjury to the interdigital skin provides a portal of entry for infection. Maceration of the skin by water, feces, and urine may predispose to injuries, and allows infection with *F. necrophorum*. This initial local dermatitis associated with infection with *F.* *necrophorum* at the skin and the skin-homjunction may progressno further, but the hyperkeratosis induced by this infection facilitates infection by *D. nodosus* if it is present. |

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| **Clinical Findings:** 1- In a flock, a sudden onset of lameness of several sheep is the usual presenting sign of foot rot. |
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| 2- The fore- or, more commonly, the hindlimbs can be affected, but more than one foot is rarely involved at the same time in mature cows.3- However, footrot can occasionally develop in several feet in calves.4- The first sign is swelling and erythema of the soft tissues of the interdigital space and the adjacent coronary band.5- The inflammation may extend to the pastern and fetlock. 6-Typically, the claws are markedly separated, and the inflammatory edema is uniformly distributed between the 2 digits. 7-The onset of the disease is rapid, and the extreme pain leads to increasing lameness. In severe cases, the animal is reluctant to bear weight on the affected foot.8- Fever and anorexia are seen.9- The skin of the interdigital space first appears discolored; later, it fragments with exudates production. As necrosis of the skin progresses, sloughing of tissue is likely to follow.10- A characteristic foul odor is produced. |

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| 11-If the disease proceeds unchecked, weight loss is severe and milk yield is significantly reduced. Milk production may not recover during the current lactation. 12-Open lesions can be infected with secondary invaders.  |

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| **Diagnosis:** Bacteriological examination is not usually necessary for diagnosis but direct smears of the lesion will usually reveal larg numbers of a mixture of *Fusobacterium* and *Bacteroides spp*. The characteristic site, nature, and smell of the lesion, the pattern of the disease in the group and the season and climate are usually sufficient to indicate the presence of true foot rot.**Differential diagnosis****sheep**• foot abscesses• Bluetongue• Foot and mouth disease• Ulcerative dermatosis• Laminitis• Lameness associated with Erysipelothrix insidiosa, and occurring after dipping**cattle** |
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| * infected sand cracks
* white line disease
* retroarticular abscesses
* foreign bodies in the interdigital space
* infection of the distal interphalangeal joint can have a similar appearance if viewed from a distance.
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| **Treatment:** |
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| * Most treated animals recover in a few days. Good results are obtained with penicillin G, 22 000 IU/kg BW IM, for 3 days. Treatment should be administered as soon as signs are observed.
* Early cases respond well to single doses of long-acting oxytetracycline.
* Ceftiofur, 1-2 mg/kg (BW) 1M.
* Sodium sulfadimidine (150-200 mg/kg BW) solution given by IV injection is highly effective.
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| * Trimethoprim IM, bid for 3 days, can also be used.
* A single oral administration of a long-acting bolus containing baquiloprim/sulfadimidine may be suitable for treating beef cattle.
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| **Local treatment.** **1-Preparations suitable** for footbaths include 5% copper sulfate, 5 % formalin and 10% zinc sulfate with or without a surfactant to aid wetting of tissues. |

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| 2-The animal must be adequately restrained and the lesion cleansed. 3- A nonirritant bacteriostatic agent (such as nitrofurazone or a sulfa preparation) should be applied as a topical dressing.   |

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| **Prevention and Control:** |
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| 1- Animals that are actively shedding infectious organisms should be isolated until signs of lameness have disappeared.  |

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| 2-Animals at pasture might be moved to a clean, dry area, or possibly housed during periods of heavy rainfall.3- Contaminated concrete must be frequently cleaned and scraped free of manure. |

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| 4- Preventive use of a footbath with an antiseptic and astringent solution (eg, copper or zinc sulfate [7-10% in water]) has given beneficial results. Formaldehyde solution (3-5% in water) can also be used, but in some areas it is considered to be an environmental hazard if discharged into natural waterways. |

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| 5- Vaccines against *F* *necrophorum* have failed because of the weak immune response to the bacterium. 6- High levels of zinc fed as a supplement have a beneficial effect by improving epidermal resistance to bacterial invaders. |

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