

How To Treat Digital Dermatitis

Digital Dermatitis (DD), also known as Hairy Foot Warts, Strawberry Foot Rot, Mortellaro's Disease and Rasperry Heel, has become the most prevalent infectious hoof disorder on many Canadian dairy farms. Dr. Paul Greenough, in his new book 'Bovine Laminitis and Lameness' (see sidebar on next page) recommends the following treatment for animals infected with DD.

Treatment of individual animals

Each of the four feet must be examined, and each lesion, particularly if papillomatous, scrubbed using soapy water and a very stiff brush. The lesion should be dried. Applying an agent to a filthy or debris-encrusted lesion will have no effect at all. Applying an agent to a wet lesion will dilute the effectiveness of the medication.

The topical dressing must be protected by a pad of gauze held in place by an adhesive bandage. Waterproof bandages are problematic because most of them will create anaerobic conditions which are ideal for the bacteria to grow. It is recommended that less severe lesions should be left open after cleaning. Topical treatment with tetracycline spray on two or three occasions is usually sufficient.



The typical DD lesion is said to resemble a strawberry. It is slightly rough, red, circular and surrounded by a halo of white cells which clearly separates the diseased tissue from healthy skin. (courtesy of C.M. Mortellaro)

Larger and deeper lesions should be covered for reasons of protection but also to prevent spreading of bacteria. A reusable device such as a 'Bootie' (Mountain Meadows, Providence, Utah 84332, USA) can be extremely useful. A small sanitary napkin has been found to be useful in keeping medication in place beneath a bootie or bandage.

The following agents when mixed with water (de-ionized) to form a paste have been found effective:

10 g of oxytetracycline powder
Terramycin-343® soluble powder
Lincomix® soluble powder
Oxytetracycline spray (Cyclo spray vet, Novartis).

One treatment may be effective for relatively mild infections, but repeated applications may be called for in more extensive lesions. External treatment has not been shown to produce antibiotic levels in the milk.

Treatment of individuals if more than 10% of the herd have lesions

All advanced lesions must be given topical treatment as described above. However, the heels of the remainder of the herd should be washed with a low-pressure hose until the details of any lesion that may be present can be clearly seen. Topical treatment should be applied using a 500 ml spray bottle or a garden-type spray.

Under free-stall conditions, the treatments can be carried out with the animals fastened in automatic headlocks. This treatment should be continued for 3 weeks, using either antibiotic or non-antibiotic preparations. Oxytetracycline has proved significantly more effective than the last two chemicals in this list:

Oxytetracycline solution (100mg/ml)
Lincomycin/Spectomycin

A solution of 25 mg/ml of oxytetracycline and 20% glycerine in de-ionized water

Valnemulin (Novartis) 100 mg/m
Lincomycin (Upjohn) 0.6 mg/ml
Hoof Pro Plus, an acidified copper sulfate (SSI Corporation, Julesburg, Colorado) [Editor's note: Acidified CuSO is also available from Nutritech Solutions, Abbotsford, BC]
Acidified sodium chlorite solution (prototype alcide bovine hoof treatment, Alkide Corporation, Redmond, Washington).
A 10% solution of formalin may also be used alternately with an antibiotic, but extreme care must be taken to avoid spraying this chemical on the udder or other areas of healthy skin. [Editor's note: Do not use formalin or antibiotics in the milking parlour. Formalin can cause permanent eye damage and inhalation of formaldehyde fumes can cause lung damage. Antibiotics can get into milk.]

Foot baths

Foot baths have been used extensively to treat and/or control DD. The use of this technique has tended to decline in North America in favour of topical treatment. Foot baths are difficult to use and some medications such as formalin are less effective as the temperature drops. However,

the main reason for veterinary surgeons not recommending this technique as frequently as they used to is that many farmers mismanage the procedure. That is to say, the baths are not cleaned with sufficient frequency. There is also concern that disposal of the solutions into the environment will cause pollution.

Common antibiotic footbath solutions (per 200 litres of water) consist of:

125 g of lincomycin (Lincospectin 100, Upjohn)
6-8 g/l of oxytetracycline
erythromycin (690 mg/l).

The use of copper sulfate, zinc sulfate, or formalin in foot baths has given inconclusive results when used alone. However, these foot baths may have a beneficial effect if used between antibiotic treatments. The medications would reduce the prevalence of interdigital dermatitis and thus, perhaps, decrease the susceptibility for digital dermatitis.

Antimicrobial resistance to antibiotics such as oxytetracycline is starting to be reported; therefore, the type of antibiotic used should be changed every 6 months.

source: Paul R. Greenough, Bovine Laminitis and Lameness: A hands-on approach, Elsevier 2007.

Bovine Laminitis and Lameness

Dr. Paul Greenough, Professor Emeritus of Veterinary Surgery at the Western College of Veterinary Medicine, literally 'wrote the book' on hoof disorders in cattle. He co-authored 'Lameness in Cattle' which for the past 3 decades has been the standard veterinary textbook on the subject throughout the world.

Dr. Greenough's latest work takes that basic veterinary science and applies it to the practical identification, prevention and treatment of claw disorders. This book describes the anatomy of hoof and claw and the causes of lameness, including the importance of genetics, structural conformation of the leg and hoof, nutrition, management, cow comfort and facilities that minimize injuries. The text is extensively illustrated with colour photographs.

Encourage your herd veterinarian and hooftrimmer to buy a copy. The book is available on chapters.ca as well as amazon.ca and amazon.com.

