

Digital Dermatitis

Digital dermatitis is an infectious bacterial disease that affects the feet of cows.



What's the Impact?



Digital dermatitis is the most common foot lesion in dairy cows¹⁻² and one that must be actively controlled on most Canadian dairy farms.



Lesions of digital dermatitis are often painful, and are responsible for causing lameness and infections that have been associated with³⁻⁵:

Decreased milk production

Poor fertility

Hoof conformation changes

Increased culling rate

Impaired animal welfare

What Does it Cost You?

No Canadian research has evaluated the economic impact, but a research team from the United States reported that each case of digital dermatitis is estimated to cost \$49 for milk loss, \$58 for decreased fertility, and \$79 for treatment costs⁶. Together, each case costs \$186 per infected cow, per year. **This means the disease could cost between \$2,790-4,092 per year for the average infected Canadian dairy herd (assuming 100 milking cows).** All prices shown in Canadian dollars.

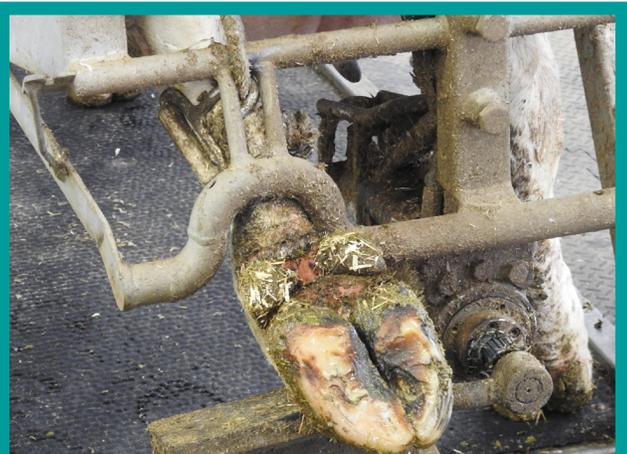
Where Does it Come From?

Digital dermatitis is a highly infectious disease that is capable of spreading throughout a herd. With respect to the cause, there remains much that is unknown; however, the science points towards treponemes, a type of bacteria. It is suspected that transmission mainly occurs from animal to animal¹⁵. A significant amount of work needs to be completed in this area to gain a better understanding of disease transmission, however, undetected and untreated animals are thought to be a continuous source of the pathogen that causes digital dermatitis.

Biosecurity Between Farms

It is imperative to prevent digital dermatitis from entering farms that are not infected. Maintaining a closed herd is the best recommended practice to prevent entry of this disease, as nearly all Canadian farms have digital dermatitis present. It is important to consider how a new, healthy introduction, or a first lactation animal entering a lactating herd with digital dermatitis can help to perpetuate the cycle of infection.

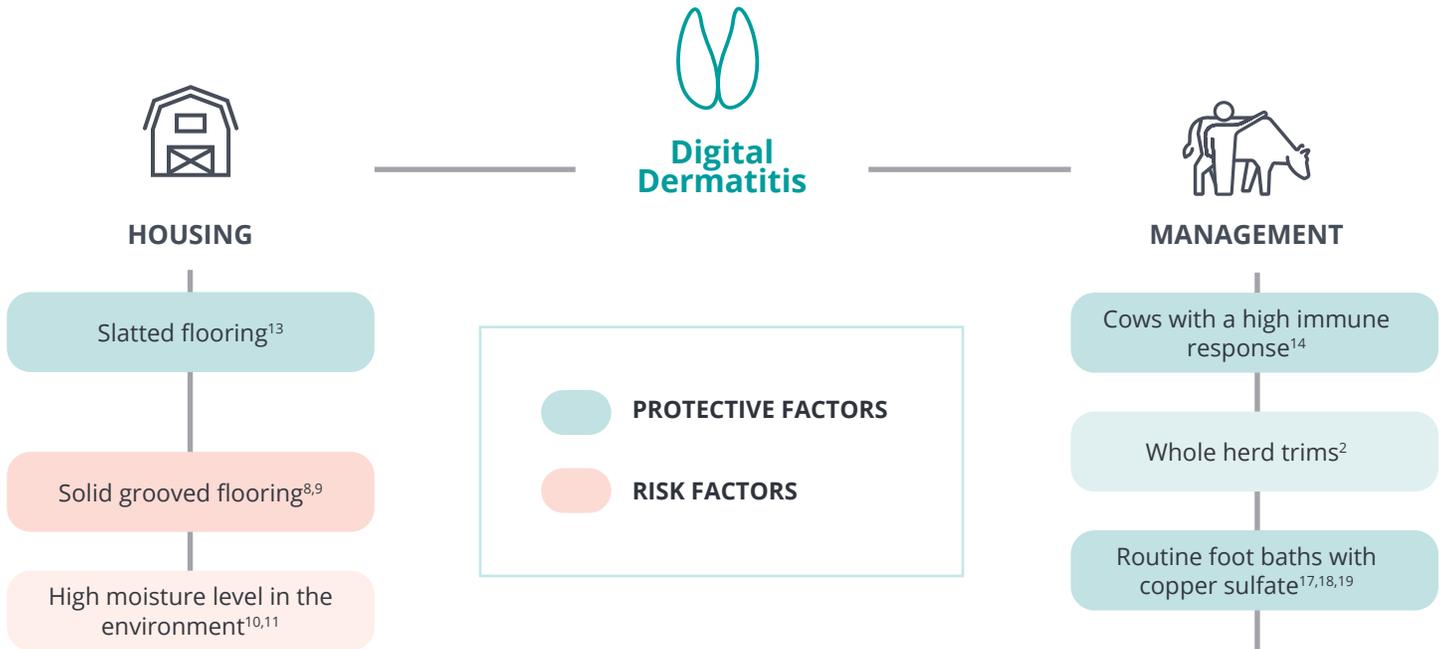
Other sources can also lead to infection. Contaminated hoof trimming equipment, such as hoof knives¹⁵ may be responsible for the transfer of bacteria between animals and between farms. The bacteria that cause digital dermatitis are able to survive for several hours on hoof knives. Specific disinfectants, such as sodium hypochlorite or Virkon™, are necessary to kill the bacteria¹⁶. Set the expectation that your hoof trimmer and veterinarian use only cleaned and disinfected equipment on your cattle to prevent the spread of digital dermatitis.



Ensure that your hoof trimmer and veterinarian use only cleaned and disinfected equipment on your cattle.

Biosecurity Within Farms

There have been many specific risk factors (factors that are associated with a higher level of digital dermatitis) and protective factors (factors associated with a lower level of digital dermatitis) that have been identified:



The main takeaway from this figure is that maintaining a clean, dry environment with minimal manure contamination, minimizing introduction of new animals, and disinfecting hoof trimming equipment are keys to reducing the impact of digital dermatitis. As is the case with most infectious diseases — hygiene is of the utmost importance! Keeping cows' feet free of manure (even a rinse with water when they are leaving the parlour) can help.

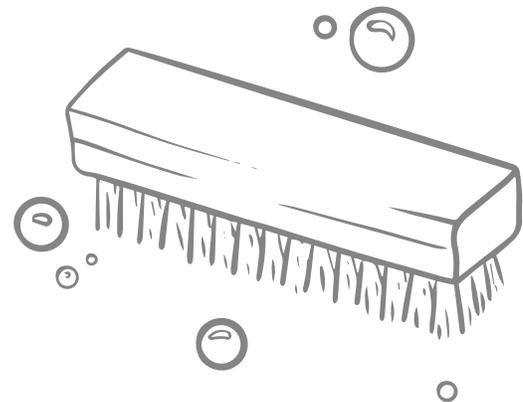
Control Strategies

Footbaths

Footbaths are effective in controlling digital dermatitis, with copper sulfate being effective in reducing its prevalence¹⁷⁻¹⁹. A 5% copper sulfate footbath used at least 4 times per week is an evidence-based protocol that might best reduce digital dermatitis lesions²⁰. To maximize the effectiveness of footbaths, it is important that each foot is submerged into the bath — it's all about contact time! It suggests that footbaths should be at least 3.0 m long to get ample submersion of the cows' feet²¹.

Identify & Treat Early

Another key prevention strategy is to identify and treat cases of digital dermatitis, especially in heifers that could serve as a reservoir of digital dermatitis¹⁵. Work with your veterinarian to first set objectives and then identify an identification and treatment strategy for your farm.



Take Home Messages

Digital dermatitis is an extremely common disease on Canadian dairy farms and represents an area of substantial economic loss. On farms that do not have digital dermatitis, maintaining a closed herd (where NO animals have been in contact with animals from another herd at any point, whether through purchase/introduction, shows, etc.) and ensuring that hoof trimming equipment is cleaned and disinfected prior to use and/or entry into your barn may prevent infection of your herd. Farms that have digital dermatitis can help to control the disease through maintaining a clean, dry environment, establishing a regular footbathing routine using an evidence-based protocol, and identifying and treating new cases of digital dermatitis as soon as possible.



Work with your veterinarian and hoof trimmer to create a strategy to tackle digital dermatitis on your farm.

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