

# CONTROLLING MORTELLARO/ DIGITAL DERMATITIS

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**M**ortellaro (also known as digital dermatitis) is a bacterial infection affecting the skin and soft tissues in the region of the hoof. The incidence of Mortellaro has risen steadily in recent years and hoof trimmers and vets report seeing it on many of the animals presented for examination or treatment.

It causes an extremely painful erosion of the skin, resulting in flat strawberry-like lesions that can be up to 5 centimetres in diameter. This condition is contagious, and if left unnoticed and unchecked, has the potential to spread rapidly through the herd.

As well as being a welfare concern, it also impacts on herd performance as a result of reduced milk yields, impaired fertility performance and an increased susceptibility to other causes of lameness.

A recently published paper in the Veterinary Ireland Journal (Conneely, M. and E. Ryan 2024) calculated the cost of a case of Mortellaro to be €201.14.

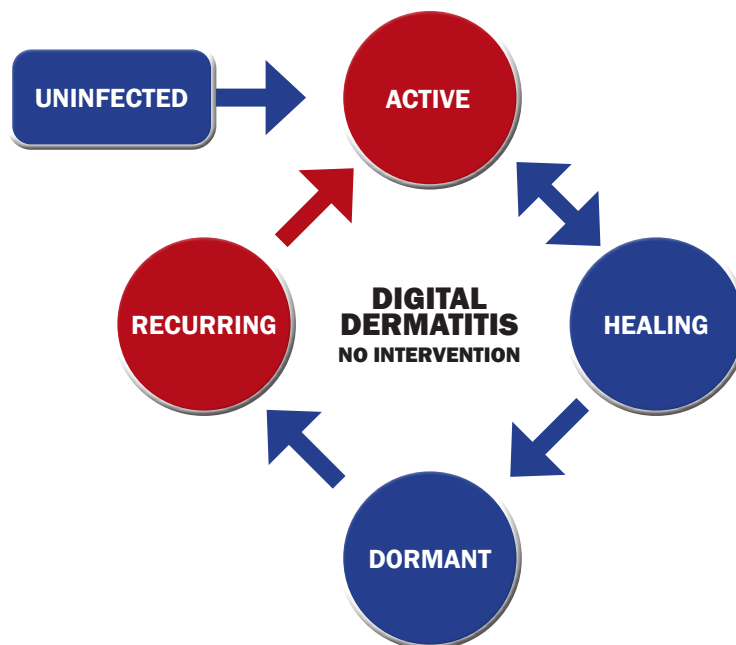
This calculation included treatment costs, farmer time, reduced milk yield, increased calving interval and cost of extra services to achieve a pregnancy.



## What causes Mortellaro?

Mortellaro is caused by a spirochaete bacterium which is active and motile and can survive in slurry for a short time (less than 24 hours @17°C). Slurry provides a very effective short-term transmission medium to spread this infection from cow to cow. It is important to understand that the Mortellaro lesions themselves are the main reservoir of infection, shedding the infection into the environment and increasing the risk to uninfected cows.

It takes an average of 4 months for an active Mortellaro lesion to develop (Krull et al.,2016). If individual cows with Mortellaro are just treated `ad hoc` when lesions are observed when the cow is lame, it is likely that the environment will be continuously fed with Mortellaro-causing bacteria, thus constantly maintaining the transmission route and driving infection within the herd.



Treating a Mortellaro lesion with an antibiotic spray will appear to cure the lesion and the cow may no longer be lame. However, these bacteria have the capacity to become encysted in the hair follicles of the skin and the cow effectively becomes a Mortellaro carrier animal, with a dormant lesion, which can recur at a later stage. Regular foot bathing prevents these dormant lesions recurring and therefore prevents recurrent flare ups of the infection.

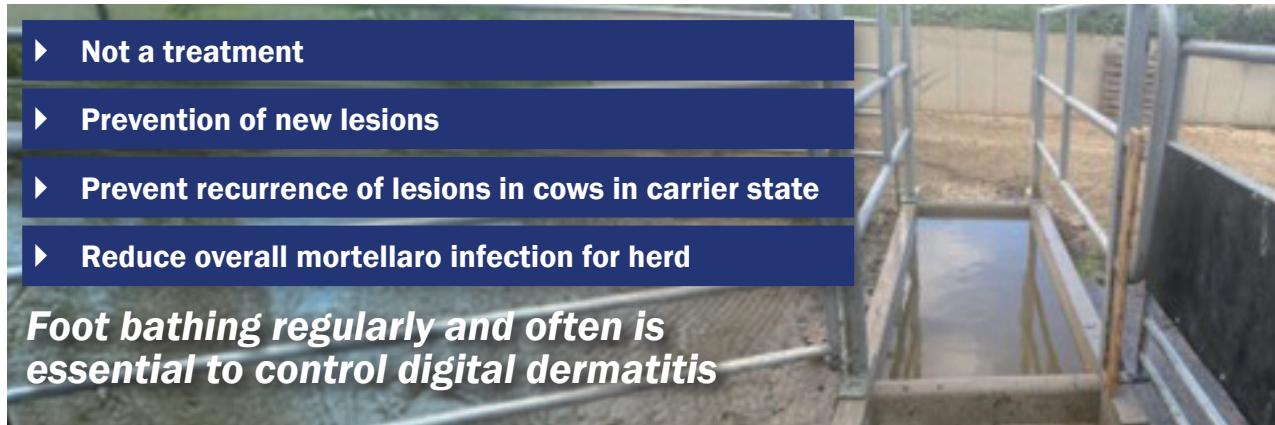
## Digital Dermatitis

- Lift foot and remove dried dung or horn that may interfere with antibiotic penetration to lesion
- Wash lesion and dry with paper towel
- Topical antibiotic spray daily x3 days. Consult with your vet.
- Alternatively apply chelated mineral gel and bandage.
- **Ensure bandage is removed after 2 days**

## What is the role of foot bathing?

Foot bathing regularly and often is an essential element in the control of digital dermatitis. To foot bath effectively, it is essential that cow flow through the bath is smooth. Ideally, the foot bath should be permanently positioned at, or near the milking parlour exit. Easy access to water facilitates rapid filling of the bath.

Foot bath options include precast concrete, building a site-specific concrete bath, or a stainless-steel foot bath that will fill, empty, rinse and refill itself automatically.



**Figure 2.** Precast concrete footbath measuring 850 mm x 3 m. This size footbath works well for herds of up to 250 cows.

## Important points

- Ensure the footbath is wide enough. A footbath should be a minimum of 700 – 850 mm wide. This will allow cows to pass one at a time with good cow flow. A footbath of 3m x 850 mm works very well for herds of up to 250 cows.
- A footbath 1.5 m wide and above will allow two cows to pass through simultaneously, and an advantage of a wide design is better cow flow. Herds larger than 250 cows should have a footbath width of at least 2m.
- Footbath should not have any steps up or down (bottom of footbath level with walking passage).
- Length: 2.5 m – 3 m.
- Solution depth should be 100-125 mm.
- Volume: 1 litre/cow passage to be effective, the reagents that you use in the footbath must be used at the correct concentrations. To get the concentration right, you need to know the volume of the footbath. Multiplying the length by the width by the depth of solution, measured in metres, will give the volume in cubic metres. Multiplying cubic metres by 1000 will be the volume in litres.
- Change solution often enough. A good rule of thumb is to allow one cow passage per litre of solution before changing. For example, a 200 litre footbath needs solution changed after 200 cow passages. An automatic footbath may be a suitable option for larger herds or herds where labour is an issue. These can be set to empty and refill after the number of cow passages you choose.

- Copper sulphate and formalin are commonly used and effective. Antibiotics are not licensed for use in footbaths. Use in footbaths contributes to the growing problem of antimicrobial resistance, with risks of potential residues in milk or meat, environmental contamination and ineffective treatment of underlying disease.
- Consult your Teagasc advisor, vet or hoof trimmer to get tailored advice about the best type of footbath for your farm.

## Mortellaro Control Programme

- Keep cow environment as clean as possible to minimize contamination of the feet with slurry. Run scrapers often and keep all yards clean.
- Foot bath regularly and continue to foot bath at least once per week all year round. If infection pressure is high (i.e., new Mortellaro lesions appearing regularly), it will be necessary to increase the frequency of foot bathing to 3 to 5 times per week.
- Identify and treat cows affected by Mortellaro as early in the disease process as possible.
- Keep young stock out of yards and housing occupied by the adult cow herd.

## SUMMARY OF KEY MESSAGES

- ▶ **Many cows in carrier state in a Mortellaro positive herd**
- ▶ **Virtually impossible to eradicate from herd**
- ▶ **Foot bath as often as possible**
- ▶ **Ensure foot disinfectant used at correct concentration**
- ▶ **Change solution after one litre per cow passage for most footbath reagents**
- ▶ **Clean environment critical**