



Digital Dermatitis: Breaking the cycle

What is Digital Dermatitis (DD)?

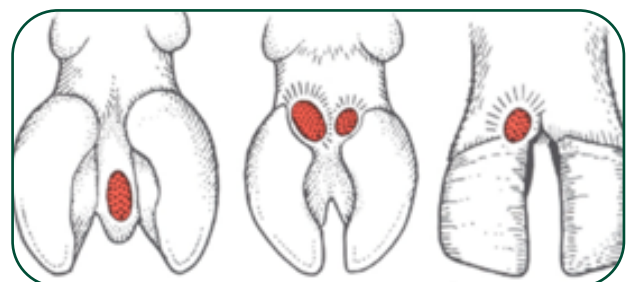
- An infection caused by a group of bacteria called the Treponemes.
- The bacteria are active and mobile, moving rapidly within a wet environment.
- It is highly contagious, spreading easily from cow to cow.
- It prefers a low oxygen environment.
- It is very invasive, burrowing deep into skin where it encysts.



Where is Digital Dermatitis (DD) found?

On the foot:

- Affects the skin around the feet, more commonly hind feet.
- Although not the primary cause of the lesions, it is also known to invade white line lesions and toe necrosis.



Elsewhere on the cow: Also found in udder, hock and flank sores and ischaemic teat necrosis.

Other animals: Same bacteria involved in contagious ovine digital dermatitis (CODD) in sheep.

The environment: Although previously thought to be a longterm reservoir, DD has only been found to survive in slurry for up to 24 hours, therefore making slurry an important transmission route but not the main reservoir.

The Digital Dermatitis Cycle



M1/2 'ACTIVE' lesions develop when skin damage allows the DD bacteria to enter the skin layers. Slurry not only harbours DD but also creates the skin damage needed for DD to take hold. However, not every cow that comes into contact with DD will develop a lesion due to a number of factors including immune status, genetic predisposition and skin integrity. **It takes on average 3-4 months for an active lesion to develop!**



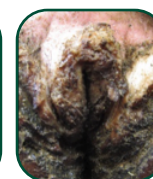
M3 'HEALING' lesions have a black scab on the surface. Not all lesions will fully heal and it is common for them to become active again if they haven't been treated successfully or are going through an aggressive footbath e.g high concentration of formalin.



In the right conditions dormant lesions can reactivate, called **M4.1 'RECURRING'** lesions. They complete the cycle by becoming active again. **Footbathing is crucial in preventing recurring lesions.**



'DORMANT' lesions. These sometimes look like a thickened 'horseshoe shaped' area of skin or have lots of layers of excessive, hard skin.



The 'Blitz' Approach to control

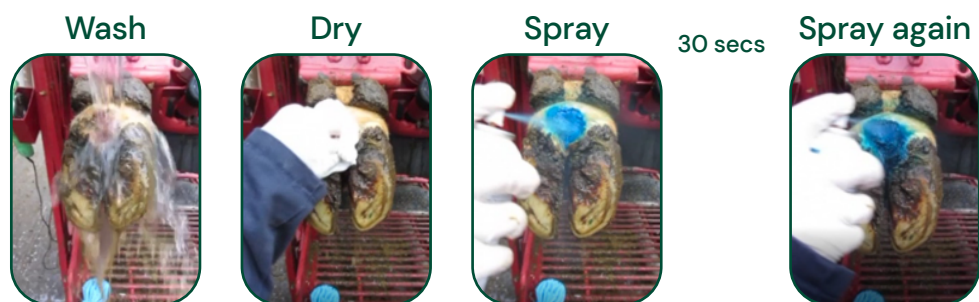
Step One: Identify all cows with an active/recurring lesion

- Inspection of the whole herd is necessary.
- Wash off feet in the parlour so that the cow's heels are clean.
- Inspect the feet using a torch/mirror to make identification easier.
- Mark all cows that have active or recurring lesions i.e. any signs of skin erosion or ulceration.



Step Two: Treat all cows with an active/recurring lesion simultaneously

- All cows need to be treated at the same time to stop the continual feeding of the environmental reservoir of infection.
- The aim at the end of treatment is that the cows are either uninfected or in the dormant stage and therefore manageable through footbathing.
- Treatment in the crush achieves more success than spraying in parlour.
- 3-5 days of treatment is usually necessary – **do not footbath during treatment stage.**
- **Treat until all lesions have formed a thick black scab over the surface and are no longer painful.**



Step Three: Prevention

Hygiene:

- Ensure high traffic areas are scraped regularly
- Attention to detail on crossover points/bottlenecks
- Resolve any areas of slurry pooling
- Time scrapers to times of least cow traffic



Footbathing:

- Ensure bath design maximises foot 'dunks' in the bath: aim for 3
- Maximise cowflow for good, even dunks and to minimise contamination
- Use an effective chemical at a known concentration
- Make it easy for you and the cows.
- Frequency dependent on farm – the more DD in the herd, the more frequently it will need to be done



Step Four: Monitoring

- Aim for <1 cow needing treatment per 100 cows per month. Wash off feet every 4-6 weeks to monitor for new/recurring cases. If a 'flare up' occurs, review prevention protocols.