Managing in wet conditions

Lameness

Extremely wet conditions are associated with higher rates of lameness in dairy cows.

Prolonged exposure to moisture causes the hoof to soften, making bruising, penetration injuries and white-line disease more prevalent. The skin between the claws and around the foot also softens and macerates, leaving the skin more prone to infections such as footrot.

The higher bacterial loads present in wet muddy environments add to the problem. Larger stones and sharp gravel in farm tracks are also exposed after the fine topping materials are washed from track surfaces.

The issue

Lameness is associated with acute pain causing:

- A decrease in the cow's ability to graze
- A loss of milk production (income)
- Lowered reproductive performance
- An increase in the chance of being culled
- Additional costs of veterinary treatment

The cost of an individual case of lameness is estimated to be between $200-$500, so if a herd outbreak occurs, the costs can quickly escalate.

Common types	Signs	Cause
Penetrating wounds to the sole / hoof abscess	Moderate to severe lameness, in severe cases may see discharging abscess just above skin/hoof junction	Cows with soft hooves treading on sharp stones on tracks, or small gravel pieces carried onto concrete on muddy feet
Bruised sole / worn sole	Moderate lameness, often in more than 1 foot. May progress into a hoof abscess	Cows with soft hooves turning / standing on concrete wears the sole down. Cows walking long distances.
Footrot	Very lame. Red, hot & swollen foot with smelly, wet putrid skin between the claws	The skin between the claws becomes soft and damaged. Bacteria enter small cracks to establish infection
White-line disease NB. The white line is the junction between the hoof wall and sole	Moderate lameness. May progress to a hoof abscess or deeper infection if not treated early, resulting in a severely lame animal	Soft hooves turning on concrete causes a thickening of the white line. Small cracks develop across the white line allowing small stones, grit and bacteria to invade the internal tissues of the hoof
Axial wall cracks NB. The inside hoof wall (between claws)	Moderately lame on affected leg. Careful cleaning and examination of hoof between the claws is required	Starts as a small crack in the hoof wall which packs with dirt. More common in wet conditions
Lower leg injury / debris	Mildly to severely lame on affected leg or cuts to the skin on the lower limb(s)	Often associated with stones or debris caught between claws (with mud). Wire or other debris wrapped around the feet after floods

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Management strategies

Stockmanship

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- Allow the herd to move slowly along tracks giving them time to choose where they place their feet
- Consider putting slow walkers and young cows in a separate herd to improve cow flow. Smaller herds reduce the competitive pressure between cows
- Give cows additional time to choose a path through restrictions or through areas where the track surface has been damaged
- Refrain from honking horns or using barking dogs.

Take particular care on concrete and in the holding yard. Soft hooves are easily damaged by twisting, sliding sideways and turning on abrasive surfaces.

- Minimise the use of the backing gate
- Avoid overcrowding in the yard
- Let the cows move into the shed at their own pace

Repairing track surfaces

Generally it is too wet to re-surface tracks during wet conditions but some preventative maintenance can reduce their deterioration.

- Carry a shovel and/or use a tractor blade to clear drains
- Clear or cut drainage paths through mud that builds up on the edge of tracks to move the water off the track surface
- Remove large or sharp stones and fill in potholes with fine screenings
- Incorporating 0.3-1% cement in the capping repair material can help stabilise the surface
- Compact repaired surfaces well
- Fence off severely damaged areas of track that are beyond temporary repair

Tracks can be topped with sawdust, woodchips or finely crushed rock/ limestone as a temporary fix in areas that have deteriorated during wet conditions.

- Use a thick layer (at least 300mm thick) when using soft topping materials such as sawdust or woodchips. Use sleepers to keep the material contained
- Consider topping the last 25m of track with sawdust or woodchips if the cattle are carrying stones onto the concrete holding yards
- Placing a log / 125mm high concrete nib wall (for the cows to step over) at the laneway-yard junction can reduce the number of stones brought onto the concrete

Protect hooves on concrete

Soft hooves are quickly worn down by rough concrete surfaces.

- Keep the concrete clean - remove stones from the concrete surface daily
- Place protective mats, carpet or rubber tiles on turning areas
- Strategically place protective mats to catch small stones brought onto the concrete yard and cushion cows' feet. These mats must be cleaned off daily
- Minimise the time cows spend on concrete, using calm and quiet handling techniques

Ensure the diet is not contributing

Insufficient effective fibre or a rapid transition to a highly fermentable diet are risk factors for rumen acidosis. Acidosis (both clinical and sub-clinical) causes inflammation of the sensitive tissues of the hoof. This results in lameness and/or a disruption to the normal growth of horn tissue and poorer quality horn.

- Introduce changes to the diet slowly over 7-10 days, particularly if aiming to increase the level of grain / concentrate feeding by more than 2-3kg per day
- Ensure the ration has adequate fibre. Aim for 35%NDF, half of which has sufficient stalk length (4-5cm) to stimulate chewing and saliva
- Consider including rumen modifiers if dietary fibre is limited
- Dietary supplements such as biotin and zinc are useful to strengthen the hoof when used for more than 6 months
- Copper supplements can cause toxicity and should only be administered under veterinary advice

Treatment strategies for clinical lameness

Early identification, diagnosis and treatment will improve cow welfare and minimise costs.

- Restrain cow and lift, wash and examine foot, taking special care to check for injuries or debris caught between claws or wire wrapped around lower limb
- Remove any cow showing lameness from the herd for examination. Treatment costs and recovery times are greatly reduced if lameness is treated early
- Treat lameness according to veterinary advice, based on the diagnosis (after washing and examining the affected foot)
- Use a block/'cowslip' to remove weight from the affected claw (by blocking the sound claw)
- Minimise walking distances and the time spent on concrete for lame cows
- Drying off or milking once a day could be considered for low producers / cows that are in poor condition
- Review procedures / seek veterinary advice if the farm exceeds your lameness threshold and becomes a concern
- Footbaths (at the dairy exit) are only indicated for bacterial footrot. They need to be cleaned and recharged daily to be effective. Seek veterinary advice as there are no chemicals registered for foot bath use for dairy cattle
- Hoof mats at the dairy entry and lead up to milking platform may be a better option. Seek advice on appropriate chemical solutions from your vet

Risk management

Higher numbers of lame cows during wet conditions increase the risks to OH&S and milk quality and safety.

- Provide safe facilities to lift and examine cows' feet
- Ensure staff are well versed in the procedures for dealing with lame cows on your farm
- Use antibiotics and other veterinary medicines according to label directions and ensure treated animals are clearly identified and recorded
- Follow the milk and meat withholding periods of the chemicals used
- Talk to your vet about strategies to minimise the risks to your herd

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