

## INFO SHEET

# Organic Management of lameness in Dairy Cows

### Introduction

- Most lameness is caused by traumatic injury to the foot followed by bacterial infection
- Most lameness can be prevented by careful handling of cows on races and yards along with a good standard of maintenance of races, especially close to the shed
- Early treatment of lame cows is critical to ensuring a good outcome.

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### Common Types of Lameness

**White Line Disease** - Occurs when a cow is shoved sideways by other cows or is forced to turn sharply on a hard surface. The resulting shear force across the hoof splits the white line allowing mud and small stones to pack in. The wedge of mud works its way behind the hoof wall setting up an infection which may subsequently break out at the heel or the coronet. Usually seen on the outside hind toes of cows and the inside front toes of heifers.

**Bruising** - Especially common in heifers if their soles are worn thin from walking long distances or standing on concrete for extended periods. Also occurs in mature cows if they are forced to walk through mudholes containing stones or if they track stones onto concrete yards.

**Sole penetrations** - Something sharp (usually a stone) has pushed all the way through the sole into the soft tissue underneath. Seen especially in animals with thin soles.

**Footrot** - A break in the skin between the toes allows bacteria to get in and set up an infection. A fissure develops and the infection may spread up the back of the leg. Usually associated with wet conditions (which soften the skin) and the presence of mud with stones.

**Toe abscess** - This is White Line Disease right at the point of the toe. Often the initial crack is tiny and hard to see. A small but very painful abscess develops in the soft tissue under the crack – a gentle squeeze with a pair of pliers will produce a strong reaction from the cow.

**Axial Groove** - This is the groove that angles up the inside of the hoof. A stone trapped in this area can cause a weakness and subsequent cracking as the hoof grows. A procket of pus may develop under the crack.

**Proud Flesh** - A blob of tissue is growing out of a hole in the hoof preventing healing – due to pinching of the soft tissue by the edges of the hoof around the hole. Most likely to occur on the inside hoof wall, between the toes.

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### Prevention

A cow is more likely to go lame if: she is a heifer or an older cow, she has white feet, she has been underfed (and/or is mineral deficient) during winter or she is exposed to wet conditions. A farm is more likely to have a lameness problem if the tracks are narrow, in poor condition and cow flow is interrupted by congestion points.

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## Prevention

BUT, the critical factors involve how people and cows interact.

Cows walking will maintain enough distance from each other to enable them to move with their heads down. This allows them to watch where they are placing their feet and avoid stones or obstacles. The speed of a herd of cows on a race is determined by the dominant cows which are usually spread from the front to the middle of the mob. If those cows slow or stop, so will the entire herd. At that point, pushing the mob from the rear will merely result in a concertina effect on the cows at the back, forcing them to lift their heads. Foot damage is then much more likely.

The yard entrance is often the most important congestion point but the same effect may also occur once in the yard if it is too small or especially if cows are pushed with the backing gate. If cows are not flowing through the shed easily in the spring, there is a reason. Such reasons may include: not enough room in the yard for cows to rearrange themselves into their preferred milking order, poor design of bail entrance, impatient milkers, plant defects, low magnesium levels, stray voltage. Recommended yard size: 1.3m<sup>2</sup> (Jerseys) to 1.5m<sup>2</sup> (Friesians) per cow.

So: preventing lameness means NO HEADS UP, anywhere, anytime.

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## Treating Lameness

October tends to have the highest incidence of lameness – no matter how careful you are, bulling cows and wet conditions usually result in a few cases.

**White Line Disease** - The most important action is to remove all under-run hoof. Fitting a Cow Slip to the normal toe takes the weight off the sore one and speeds healing. Many vet clinics run courses on lameness, including how to pare a hoof. These are highly recommended.

**Bruising** - Rest is the only treatment – close to the shed, milk OAD. Arnica may help in the early stages. If only one toe is involved, a cow slip may speed healing. Most recover quite quickly, but as the bruise grows out, that area of hoof may be weak and subsequently crack open – always lift the foot and have a quick look, a couple of days and again a couple of weeks later.

**Sole penetration** - The area must be pared back and drainage established. Ensure mud can't pack into the hole by fitting a cow slip.

**Footrot** - Check there are no stones jammed in the fissure and flush mud out with a hose. This must be tackled early. If the infection starts spreading up the back of the leg (can happen very quickly), treatment will need to be somewhat extended. Options: see below.

**Toe abscess** -Nip the front point of the hoof off with hoof cutters (about 5mm) and have a look. The crack may now be obvious. Cut a notch with the cutters or a hoof knife to release the pus. Fill the hole with copper ointment.

**Axial Groove** - Follow any cracks with a hoof knife. If a crack goes all the way through the hoof, there will be infection underneath. Be careful to smooth off hoof edges and minimise bleeding in this area – it's very prone to developing proud flesh.

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**Treating Lameness**  
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**Proud Flesh** - Slice off the blob of tissue (it has no nerve cells so the cow won't feel it, the tissue underneath will be quite tender though), smooth off the edges of the hole to prevent pinching and apply copper sulphate daily for a few days. Sometimes the area can be sprayed without having to lift the foot. Bad cases may need a bandage, in which case a Shoof copper sachet placed against the exposed soft tissue is useful.

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**Soft Tissue Infections – Options**

All of the above can result in infection of the soft tissue under the hoof, or in the case of footrot, between the toes.

Copper and zinc sulphate are both antibacterial and serve to harden up tissue. Where the infection is superficial they will speed healing. If the infection is deeper, drainage is essential. In these cases copper will help prevent proud flesh formation (which tends to block drainage) but at the same time overuse of copper may seal the infection in. Applying (Australian) tea tree oil, aloe vera or iodine first, followed by copper sulphate as ointment or a 1 in 10 solution as a spray should control infection without impeding drainage.

**“I use plantain and a bit of honey but I think I’ve gone more to the CuSO<sub>4</sub> because it lasts a bit longer. With the plantain you’ve got to pick it up every day and change it. It works, but I’ve had better results with the CuSO<sub>4</sub>. You can get little sachets of CuSO<sub>4</sub>. They are convenient and only a couple of dollars. Like a teabag. They are good for 4 or 5 days. Some cows with the stone infection they have 2 or 3 of those before I draw it out. Give them homeopathy as well if they are infected i.e. smelly and sore, I give them Hepar sulph and then silica to help it heal up. It comes from that muddy bit around the shed”. Nick Collins, Piopio.**

For a nasty footrot, saturate the area with tea tree oil or aloe vera, cover with a layer of saturated medical swabs (or something non-stick, *not* cotton wool) and bandage. If the fissure is deep a small syringe may be needed to get the medication right in. The bandage will need to be changed daily. For more superficial footrot, copper sulphate ointment or as a 1 in 10 solution (without bandaging if the weather is dry) or plantain bandaged on, can be used.

Homeopathics are commonly used (hepar sulph is popular) or contact Homeopathic Farm Support for advice.

**Note on bandages:** Unless changed daily, they tend to impede drainage and trap mud and moisture. They are really best used only on cases of footrot or intractable proud flesh. Sometimes a poultice incorporating dock or plantain with manuka honey is used to assist drainage – once again, it needs daily changing. Elastoplast or Vetwrap are great durable materials but expensive and unnecessary if being changed daily. A cheaper option is a thin gauze bandage (such as in the Shoof refill kits) overlaid with duct tape.

**Note on Cowslips:** They must only ever be fitted to a normal toe. If you're not sure there is a problem in a toe, squeeze it with (preferably) hoof testers or pliers. Check the front of the hoof, then the middle and then across its width. There are cheaper alternatives to Cowslips – they tend not to stay on as long, but if a short period is all that's needed, they work fine.

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**Footbaths**  
**Footmats**

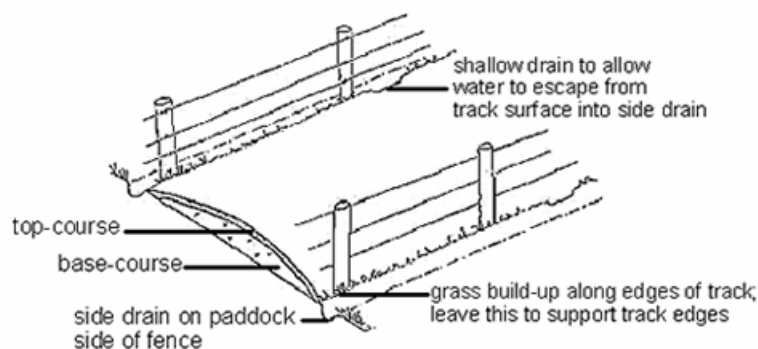
These tend to be of limited use but may help in some situations. Zinc sulphate is best – it's cheaper than copper and doesn't remove galvanising from pipework. 1 part zinc sulphate to 9 parts water; add about a third more zinc if it's the heptahydrate form. It can be used to help harden up hooves or to limit a footrot outbreak. An outbreak situation is uncommon but should it happen, it is essential for the zinc solution to fully contact the skin between the toes. If using footmats, this means topping them up every 100 cows or so.

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**Races**

Building a race is like building a road – it needs a solid base, properly compacted (preferably with a vibrating compacter), and a crown to shed water. This is particularly important close to the shed since it gets the heaviest traffic. So long as water can move off the race, build up of dung (and *Streptococcus uberis*) is minimised. If water is allowed to pool, it will eventually seep down and undermine the base. A mudhole rapidly gets worse as cows tend to stop while considering how best to negotiate it – they then add their dung to the mess. The slope on the crown is a compromise between shedding water and still giving the cows a comfortable surface. 6 – 8 degrees is probably ideal. Drains should be on the other side of the fence. Grass growing up under fencelines helps stabilise the side of the race but will impede drainage – the answer is to clear a channel through the grass every 10 or 20 metres to make sure the water can get away. Bridges need to be wider than the race and have sides that form a visual barrier (e.g. plywood). Material used as a top course will vary with locality. Crushed lime rock is a very good capping material, especially near the yard - it does a great job of trapping stones so they won't get walked onto the concrete. It must be rolled and properly shaped though; otherwise it can scour out with the first downpour, and is probably not suitable for more than gentle slopes.

Recommended race width: Up to 250 cows – 5.5 m. Add another 0.5 m per 100 cows.



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**Additional information:** [www.organicpastoral.co.nz](http://www.organicpastoral.co.nz)

Grow Organic Dairy is a project by ODPG and Massey University and aims to grow the organic sector by supporting existing and potential organic farming businesses. The project is funded through Sustainable Farming Fund and DairyNZ.



Massey University

