

Successful treatment of thin soles in dairy cows

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There are two main subjects to discuss when talking about thin soles of cattle hooves. On one hand an abrasive floor, particularly a new one, can cause massive abrasion of sole horn. On another, excessive hoof trimming is frequently a cause of thin soles.

Without immediate intervention some cows will lose their complete sole, and corium will become uncovered, especially at the tip of the toe. Being close to the bone this area is very vulnerable for ascending infections leading to progressive, life-threatening inflammations.

Another problem is painful soles caused by laminitis – cows show extreme gait problems and also need urgent relief of load on affected claws.

To preserve the sole and the animal from further deterioration, veterinarians and hoof trimmers often recommend immediate housing on soft ground like straw or rubber mats.

Covering the hooves with padded dressings is also possible, but walking on concrete will destroy the dressing within one or two days. Therefore, it is necessary to search for a useful and practical solution. To prevent sore feet in horses fast setting adhesives can be used under the sole, so why not in cows? Now a perfect method is available, when the corium is still not affected.

Using a hoof tester to detect pain areas of thin soles.



Thin sole lesion presenting.

Let cows walk again

The invention of a flexible block is a solution to the problem. These soft blocks can be fixed on healthy inner claws (hind leg), but also on all inner and outer claws.

Up to now softer blocks were made of rubber or polyurethane. The elastic compliance was limited, and was often combined with a hard glue. The new flexible Walkease blocks from Shoof International Ltd, Cambridge, New Zealand, are made of ethylene-vinyl acetate (EVA) with Shore hardness A 70 (± 2).

These soft blocks feel like firm sponge rubber and are flexible. They are fixed with a special Walkease adhesive. Different sizes can be identified by different colours, the largest size is blue and white.

White Wedgie blocks are also available to raise the heel slightly – not recommended for thin soles, but in case of sole ulcers and other problems in the hind area/bulb area of the hoof (previous research).

These soft blocks can be fixed under soles without any problems even when the sole is very thin or affected by laminitis (even if there is some pain reaction). A good way to prevent further abrasion is the attachment of one block on each inner and outer claw – at an early stage – before the corium is exposed!

A sole as flat as possible is necessary, so the horn has to be trimmed very carefully. The additional use of the Walkease rasp provides the correct surface for the Walkease block to adhere to.

Choose the correct size that will support the whole hoof wall. At the hind end of the sole the block must support the heel bulb, and therefore it is necessary to use blocks which are longer than the load-bearing sole. The block should overlap the sole by approximately two-finger width (half of soft bulb), otherwise there may be too much pressure under the area of typical sole ulcers.

In recent research a wedge form of hoof block had achieved best results for load release and locomotion score. Walkease Wedgies are available, made of the same flexible material (these should not be used when there is exposed corium or ulcers under the tip of the toe.)

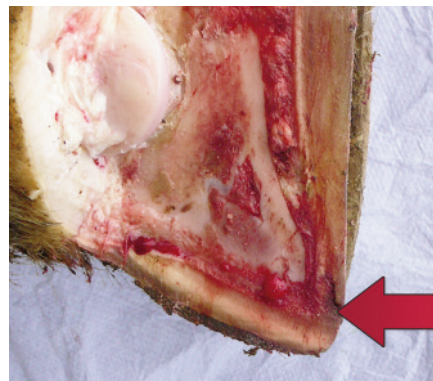
In general the large blue/white-colour Walkease block (120mm long and 20mm high) has the best shape (the material can be trimmed if necessary).

Super glue

One of the advantages of the Walkease system is the Super Glue type adhesive with its short time for setting. The glue activates very quickly (after 5-10 seconds or so) and the foot can then be set down. The weight of the cow is necessary to bring the glue to its perfect adhesive properties, and this should be done before the glue has cured completely.

This cyanoacrylate adhesive is activated by
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Thin sole apparent in cross-sectioned hoof – showing opening to infected corium.





Final preparation of hoof for Walkease application.



Application of Walkease adhesive on a thin sole.

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moisture, so the hoof should never be dried artificially (air gun or alcohol, etc). The natural hoof moisture is what activates the glue. Damp conditions are no problem.

In extremely cold weather, when the air is very dry, the activation can be assisted by breathing deeply onto the glued block, before attaching it to the hoof (the glue should be carried in your pocket).

Using a fast-setting polyurethane adhesive will not reliably fix these prosthetics. In poor conditions the blocks will fall off after a few hours.

Fitting procedure

Treatment of the injured claw must be completed first and then the healthy claw is prepared for fitting the block. In case of thin soles because of excessive abrasion a flexible block should be fixed on both hoofs – the inner and the outer. Trim the surface carefully, especially when the sole is thin.

At least one third or a half of the sole must be as level as possible to give enough adhesive surface. The flexibility of the blocks permits an adaptation to slight unevenness.

Now use the Walkease hoof rasp (supplied in the kit) or a rasp for wood to prepare the healthy claw – even if a grinder or other cutting tool has been used to prepare the claw.

The rasp provides the correct flat and clean surface for the Walkease block to adhere to. Do not dry the hoof artificially in any way.

Test the Walkease block for size and shape on the healthy claw. Choose the correct size that will support the whole hoof wall. Handle the Walkease block carefully ensuring the gluing face is kept perfectly clean (every Walkease block is individually wrapped in plastic to ensure that it is kept clean before use.)

To avoid getting glue on hands, it is essential that you wear gloves during this procedure.

Apply glue sparingly to the Walkease block. Do not use excessive glue (2ml maximum). To wipe excessive glue off with a spatula if over-applied is recommended.

There are two parts necessary to bring the glue to its perfect adhesive properties:

- Press the block very firmly onto the healthy claw. According to the manufacturer you will feel the block 'grip' after about 5-10 seconds of steady pressure (possibly up to 20 seconds in very cold or very dry conditions with low humidity – for example below freezing).

- Drop the leg carefully down for the cow to put weight on the block. This part is a crucial point. The Walkease block will not attach securely if weight is not applied before the glue has completely set. This part is most important. The glue sets very quickly under the animal's full weight. The excess glue is squeezed out and the block conforms to the claw surface. This improves the sur-



Using brief pressure to stick Walkease block.

face area contact giving a stronger bond. In very cold weather the bond time may increase a little, so in these conditions give the animal a little longer standing on the block before releasing it from the crush.

Durability

Wooden blocks are very useful in tied housing. In loose housing systems they are exposed to quick wear, depending on the floor surface. So the blocks are not flat anymore and pressure damage to the hoof can occur. Blocks of rubber or polyurethane, and other hard plastic blocks seem to have



Good treatment when all the soles are thin.

higher abrasion resistance. Some blocks are formed with depressions, where stones or dung could cling. The rear end of these blocks often deforms because of the weight stress. Walkease show a slight loss of height during 10-20 days. The rear end of these blocks often deforms towards the bulb, but they stay soft and so they stay comfortable for the cow. Nearly almost no wear occurs.

Removal

Normal hard blocks have to be removed after 3-4 weeks to prevent further injury to the animal. It can then be necessary to trim



Outer claw bandaged, inner claw blocked.

the hoof again and fix a new block (a current study shows problems of horn growth under blocks after that time). It is also quite necessary to remove hard lumps of glue that may be left under the hoof after de-application of hard blocks.

It is an empirical fact that farmers often do not remove blocks, so a self-releasing system is very interesting. Walkease blocks generally do not require removal.

The adhesion of walkease is very good for one to three weeks. Some blocks remain longer – up to 40 days. Walkease in the slurry pit usually are not a problem. Long lasting blocks can easily be removed by using a nipper or pliers. ■