

Bovine Lameness

Hoof Trimming

Applying Hoof Block

The treatment of lameness due to sole ulcers or white line disease in dairy cows commonly involves the application of a wooden or plastic hoof block to the unaffected hoof. This improves healing by removing the pressure from the affected hoof and significantly reduces the pain felt by the cow. Blocks applied to healthy cows do not negatively affect cow behaviour or milk production.

Following is a review of the steps to ensure proper block application and selection.

The steps to properly applying a hoof block include:

1. Proper functional and therapeutic trim to both hooves
 - The use of a rasp and heat gun is essential for this step
2. Removal of dirt and moisture of hoof to be blocked
 - The use of a rasp and heat gun is essential for this step
3. Selection of properly sized block
4. Application of glue to block
 - Place glue in a pattern that avoids creating pressure points at the heel and at the typical sole ulcer site
5. Positioning block on foot at correct angle
 - Do not press too hard when placing block, about 1/8-1/4 of an inch of glue should be between the hoof and the block
6. Time wait of 1 to 3 minutes before placing foot down to allow glue to harden
7. Rechecking cow in approximately 4 weeks

Of these steps, two of the most important concepts are:

1. Position block on foot at correct angle:



Correct positioning



Incorrect positioning

Applying a block at a 90-degree angle or less to the metatarsal bones in the leg ensures that weight bearing is appropriately reduced on the affected hoof and not transferred to the outside wall of the diseased hoof. Blocks have a tendency to shift over time to incorrect positioning as illustrated above. To counteract this situation, it is recommended to apply the blocks at angle <90 degrees. If the block does shift over time, it will still be able to prevent weight bearing on the affected hoof.

2. Selecting a properly sized block



Too short



Appropriate length

The other important concept is to use blocks that are of appropriate length. In most cases there is more potential for harm by applying a block that is too short rather than too long. An appropriately sized block extends beyond the weight bearing surface of the heel. In most situations this means appropriate block length is between $5\frac{1}{4}$ -6 inches (13.3-16.2 cm). By extending the block past the weight bearing surface of the heel, pressure on the soft heel horn is reduced during heel strike while the cow is walking and the risk of block induced haemorrhages and ulcers is reduced. Block length becomes excessive and the risk of being ripped off increases when it extends past the non-weight bearing part of heel to the level of the dew claws.

After these steps there is a need to ensure blocks wear appropriately and do not remain on for too short or too long of a time period. Block wear is influenced by block type, bedding type and flooring surface. To allow sufficient healing, blocks should remain on for at least 4 to 6 weeks. If a block does stay on for a

shorter time period, healing likely is not complete and the return of weight to the affected hoof will delay healing and increase re-occurrence of the lesion. A block that remains on too long can cause damage to the initially unaffected hoof due to excessive weight bearing. The most common lesion that results from having a block on too long is a sole ulcer.