



LAMENESS IN DAIRY COWS

# Effects of lameness on animal fertility and farmer yields





**They are one of the biggest risks for dairy cattle kept indoors: Hoof diseases occur mainly when the mechanical and hygienic conditions inside a barn do not meet the natural requirements of the animals.**

If left untreated, even minimal hoof diseases can, in the worst instances, lead to pronounced lameness of cows, in other words significant restrictions to their mobility. In this blog post, we will take a closer look at how lameness impacts on fertility and its broader implications for farmer yields.

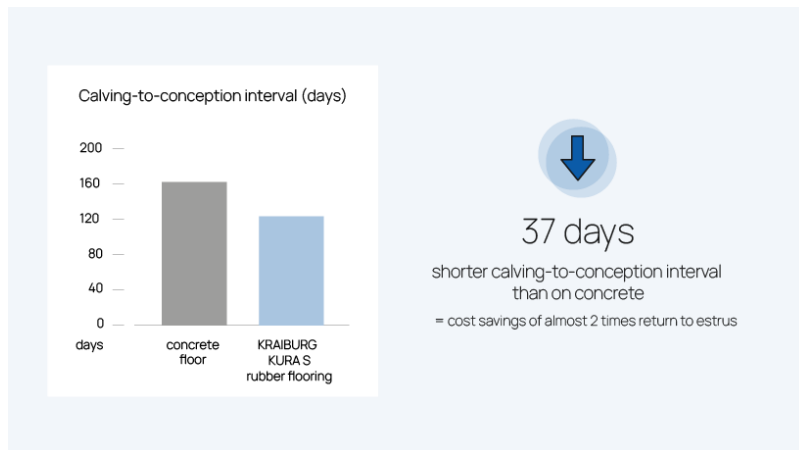
## Causes of lameness

First, we would like to take a closer look at the possible causes of lameness, specifically **hoof diseases**. Frequently, it is hard and abrasive barn flooring that disrupts even loading and wear of cow hooves. The hard ground causes incorrect loads and pressure points, which, if left untreated, can lead to inflammation. If these diseases are not treated promptly and expertly, there is a risk of secondary diseases, potentially leading to severe lameness in the worst case scenario.

## Impacts of lameness on fertility

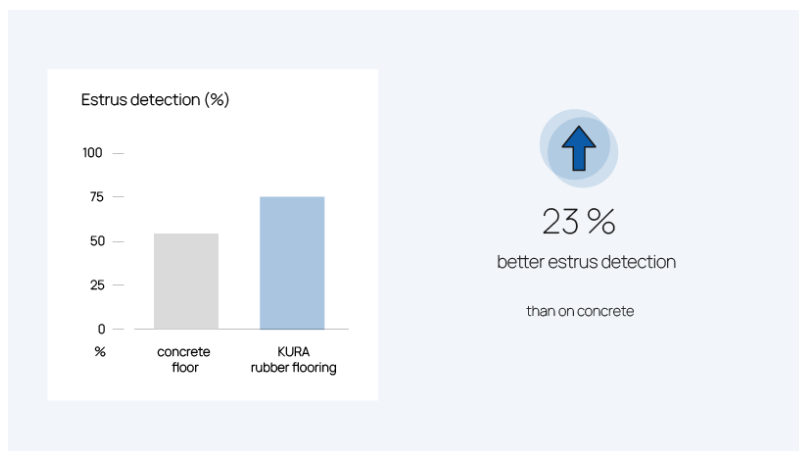
Lame cows exhibit significant symptoms that can have a profound influence on fertility. Restricted movement, for instance, leads to reduced and inadequate feed intake in cows, consequently **elevating the risk of metabolic disorders, mortality, cysts and various other diseases.**

In addition to the reduced feed intake, the pain and subsequent lack of physical activity also have a direct effect on fertility. Thus, animals with lameness symptoms are usually less likely to show signs of estrus behavior. This is particularly reflected in reduced mounting activity. At the same time, the calving-to-conception interval tends to be longer, resulting in significantly lower pregnancy rates for lame cows compared to those with good exercise and estrus behavior.



Increased mounting frequency and enhanced estrus detection contribute to improved fertility performance on farms. For example, the calving-to-conception interval can be reduced significantly.

Source: Werny, 2014



A key component in fertility management is readily identifiable estrus through unrestricted mounting. Research indicates that increased mounting activity on cow-friendly walking areas positively influences estrus detection on farms.

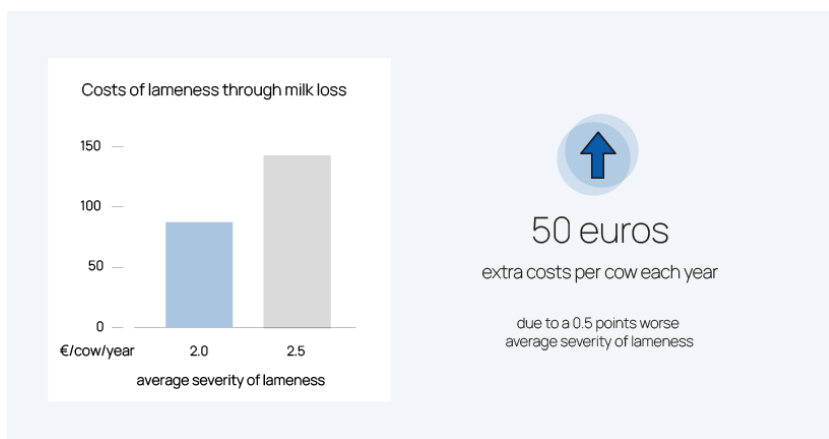
Source: Werny, 2014

## Impacts of lameness on milk yield

Let us now consider the **economic losses due to lameness**: The essential criterion for dairy cattle is milk yield. And again, exercise and feed intake play a crucial role.

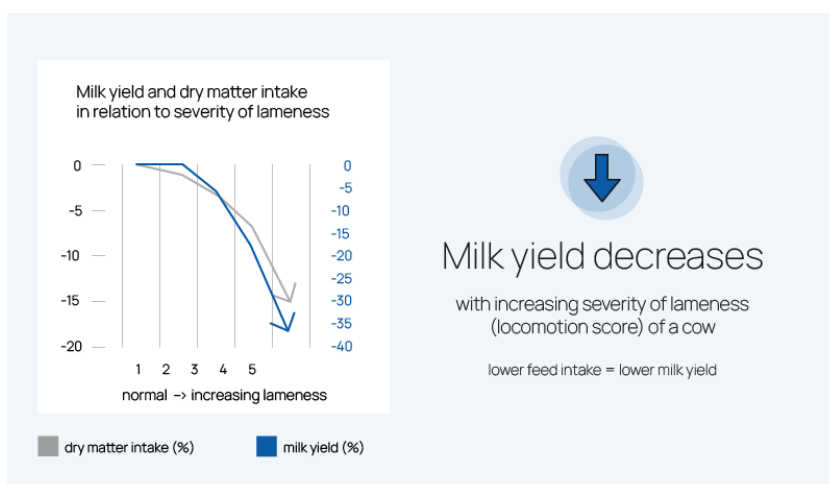
As previously noted, lame cows usually move much less than healthy ones. Species-appropriate feed intake is disrupted. This weakens the cows' metabolism, causing them to lay down more frequently and visit the feeding table less often. Ultimately, this exacerbates the decline in milk production among already compromised cows.

**The cow's severity of lameness is directly linked to its reduced milk yield.** Even with a moderate lameness rating of 3 out of 5 points, there is already a noticeable 5% loss in milk. This value increases up to a 36% loss in milk if the lameness rating is severe (grade 5). **The greater the severity of a cow's lameness, the lower its milk production** - with significant implications for agricultural yields. <sup>1) 2) 3) 4)</sup>



Milk price €0.30/kg, average milk yield 35 kg/day. Not considered: Effects on fertility, veterinary costs, waiting times for medication administration, increased replacement rate, treatment costs, DM intake, etc.

Sources: Locomotion Scoring nach Sprecher et al., 1997; Lameness Calculator, P.H. Robinson, UC Davis



Sources: Robinson P.H., 2013; Locomotion Score to Sprecher et al., 1997

## Further costs due to lameness

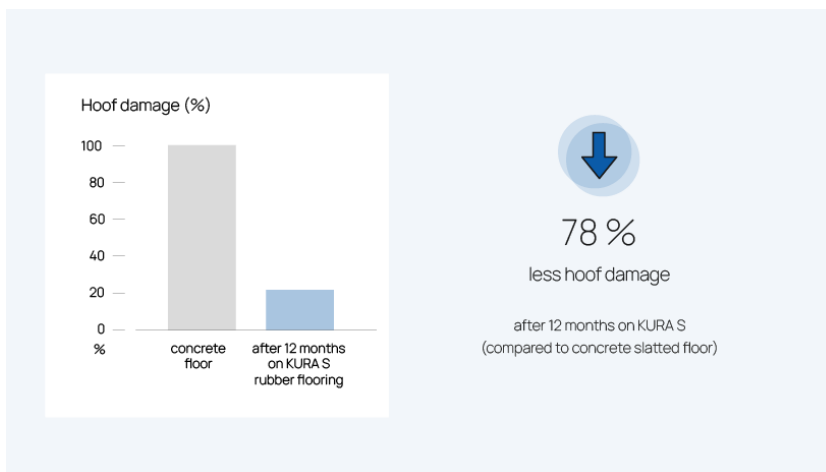
In addition to the previously mentioned losses stemming from reduced milk yield and diminished fertility, lameness also inflicts additional economic damage – primarily through high **treatment costs for sick animals and premature mortality**.

Expenses related to medication, veterinary care, escalated antibiotic usage and the need to isolate sick animals in specialized stalls pose substantial economic risks for a farm business. According to various sources <sup>5)</sup>, the **overall costs per animal and lameness is about €400** – and rising. Identifying lameness and its underlying causes early on is not only good for animal well-being but also makes sense from an economic perspective.

## How to prevent hoof diseases

What strategies can be employed to efficiently mitigate the health and financial risks associated with lameness in animals? Considering that lameness typically stems from a prior hoof disease, a particularly obvious solution is: Species-appropriate barn flooring!

**The right flooring can help prevent hoof diseases in dairy cattle in the long term.** Investments in soft barn and walking alley mats, such as our KURA and profiKURA models, is well worth your while: Considering the substantial financial losses associated with lameness, particularly in terms of fertility and milk yield, you are likely to get a return on your investment very quickly. By doing so, **you not only enhance economic stability and profitability but also champion animal welfare and boost the long-term sustainability of your farm at the same time.**



Studies indicate that mechanical-traumatic hoof damage is reduced when using soft rubber flooring on walking alleys. An observation from real-world experience: Highly active animals during estrus exhibit notably fewer hoof injuries.

Source: Benz, 2002

Sources:

- 1) <https://www.gesunderinder.unibe.ch>
- 2) <https://cowcare.eu/de/klauen-gesundheitsrechner/>
- 3) <https://www.vetmeduni.ac.at>
- 4) <https://www.zinpro.com>
- 5) Dolecheck u. Bewley, 2018