



Lameness scoring in dairy cows



Introduction

Lameness is an abnormal gait resulting from injury, disease or discomfort on one or more hooves and/or limbs, which results in the animal reducing the pressure on the painful foot or limb. Foot disorders are the most common causes of lameness. Lameness that does not originate from the hoof can be due to e.g., trauma, arthritis or muscular ruptures.

In dairy cattle farming, lameness is a major pathological condition. The prevalence of lame cows is up to 30 % worldwide, with more than 70 % of lame cows in some herds. It is the third most common health disorder, after mastitis and reproductive disorders. Lameness causes pain and discomfort and thus compromises the welfare of affected animals.

Lameness cases are commonly classified as infectious (e.g., digital dermatitis, interdigital dermatitis, interdigital phlegmon [also called panaritium or footrot]), non-infectious (e.g., sole ulceration, white line disease, laminitis), or both. In dairy cows, three main lameness cases occur in herds: subacute or chronic laminitis, interdigital dermatitis, and digital dermatitis. Occasionally, a hoof puncture wound can occur and cause a subsolar abscess.

The causes of lameness vary greatly within and between housing systems. For example, in a study in Austria, the prevalence of white line disease was 47% in cubicle systems whereas it was 20% in compost-bedded pack systems.



Legal requirements

Directive 98/58/EC on the protection of animals kept for farming purposes states that ill or injured animals must be cared for without delay.

'Any animal which appears to be ill or injured must be cared for appropriately without delay and, where an animal does not respond to such care, veterinary advice must be obtained as soon as possible. Where necessary sick or injured animals shall be isolated in suitable accommodation [sic] with, where appropriate, dry comfortable bedding.'
(Annex, Paragraph 4.)



Method




The lameness status of a cattle herd can be defined by the prevalence of lameness and the identification of the main lameness types (infectious, non-infectious, or both). The causes of lameness can then be identified and an action plan put in place.

During a farm visit, an inspector should be able to assess the prevalence of lameness using animal-based measures (see next pages) and to gather information about main types of lameness in the herd, and check that preventive and corrective measures are in place and relevant for the most common type of lameness on the farm.

Assessing the prevalence of lameness

The prevalence of lameness in a herd can be determined by observing the gait of walking cows (dynamic scoring). Alternatively, lameness can be detected in tethered or otherwise stationary cows by observing their standing posture (static scoring).

Dynamic scoring requires mobilisation of cows one by one on a long, flat corridor with non-slippery solid flooring and free of obstacles. The animal's gait is to be observed. Moderate and severe lameness can be distinguished as indicated in the table below (*adapted from Welfare Quality, 2024*):

Level of lameness	Example
No lameness Timing of steps (temporal rhythm) and weight-bearing equal on all four feet	 <p>© SLU/STAAF LARSSON, Birgitta</p>
Moderate lameness Imperfect temporal rhythm in stride creating a limp	 <p>© VETAGRO-SUP/LEDOUX, Dorothée</p>
Severe lameness Strong reluctance to bear weight on one limb or more than one limb affected	 <p>© VETAGRO-SUP/MOUNIER, Luc</p>

In lame cows, shorter steps and head bobbing can also be observed.

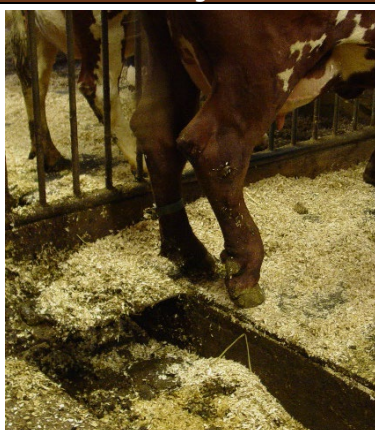
Static scoring aims at detecting cows:

- resting a foot (one more than another), weight shift on one side and/or back arched to relieve the affected limb
- standing with the tip of the hoof on the edge of a step (to avoid bearing weight on one foot/part of foot)
- stepping: frequent weight shifting between feet, or repeated movements of the same foot (this could also be due to nervousness, flies, or anticipation of feeding)
- reluctant to bear weight on a foot when moving
- rotating foot, i.e. the foot axle moves away from a virtual line that is parallel to the centre line of the body.

Static scoring may not allow the detection of mild lameness. A cow showing at least one sign related to lameness (except rotating foot) should be considered severely lame.

Indicators of lameness in tethered cows

Resting foot



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Standing on edge of a step



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Stepping



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Rotating feet



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References

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