



Challenge Note 2E: Locomotion Scoring

ANIMAL HEALTH CHALLENGE FOR DAIRY FARMERS

Similar to where there is a range in the body condition score of cows within a herd, there is also a range in the locomotion score. Locomotion scoring is an objective assessment of cow lameness and can be used for monitoring herd lameness levels. As a result, it can increase the level of lameness detection and raise awareness of lameness in individual animals. Various locomotion scoring techniques have been developed based on a wide range of cow behaviours, but a simple scoring system that is easy to use can be just as effective. The aim of this *Challenge Note* is to describe the principles of locomotion scoring so that cows with mild lameness can be identified early allowing appropriate corrective action to be taken.

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Lameness in the Dairy Herd

Lameness is estimated to cost the average 100-cow dairy herd in Northern Ireland almost £4000 per year (*Challenge Note 2A: The Economic Cost of Lameness*). The incidence of lameness can vary widely between herds affecting 4 - 44% of cows in a herd per year. While differences in management and husbandry practices can account for some of the differences, much of it is due to the interpretation of varying degrees of lameness.

Lameness is caused by pain, but this can vary in intensity. This variability in pain leads to under-diagnosis of lameness, and it is estimated that 50-75% of cases are undiagnosed. Therefore to standardise lameness diagnosis locomotion scoring has been developed and can be used to benchmark the incidence of lameness.

Locomotion Scoring

Before adopting a locomotion scoring system it is important to be aware of all the signs of lameness. Uneven weight-bearing on the affected foot and slower walking are undoubtedly the most obvious signs of lameness. However, these are symptoms of fairly advanced cases. It is therefore important to watch for more subtle signs of lameness that can aid earlier diagnosis such as head nodding and arching of the back.

Various locomotion scoring systems have been devised and the more complicated ones look at a range of gaits as seen in Figure 1.



Figure 1: *Characteristics of lameness*

The most practical locomotion scoring system is probably the four-point system proposed by Cook in 2003, outlined in Figure 2. This simple system allows a cow's locomotion score to be assessed while walking and does not require detailed assessment of the standing cow.

Cows should be scored while walking on a solid, flat, non-slip surface, and the same surface used for repeat scorings by the same person. Ideally all cows should be scored in the beginning. Follow up scorings of 25% of the herd or a minimum of 50 cows can give an acceptable estimate.

Cows scoring 3 or 4 are clinically lame, and a herd incidence of 10% or more of these should initiate more detailed investigation.

It is recommended that:

- Score 3 cows should be presented to a vet or hoof trimmer;
- Score 4 cows should be culled if they do not respond to veterinary treatment.

Investigation should consider the cause of pain in lame cows. Keeping a record from previous scorings can indicate where the problem is most likely to be, and comparison with these may point to a herd specific problem. Any treatment for clinical lameness should involve consultation with your vet, hoof trimmer and nutritionist.





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| <p>Locomotion Score 1 – Sound</p> <ul style="list-style-type: none"> • Walks rapidly and confidently. • Long strides – rear foot falls near front foot. • Back: <ul style="list-style-type: none"> • Level when standing. • Level when walking. • Head when walking – straight and smooth. • Not favouring one foot. • Body condition score not affected. |  |
| <p>Locomotion Score 2 – Slight lameness</p> <ul style="list-style-type: none"> • Walks somewhat slowly. • Slight shortened strides – rear foot falls short of front foot. • Back: <ul style="list-style-type: none"> • Level when standing. • Slight arch when walking. • Head when walking – straight and smooth. • Not favouring one foot. • Body condition score not affected. |  |
| <p>Locomotion Score 3 – Moderate lameness</p> <ul style="list-style-type: none"> • Walks somewhat slowly – frequent stops. • Deliberate short steps - rear foot falls very short of front foot. • Back: <ul style="list-style-type: none"> • Slight arch when standing. • Arch when walking. • Head bobs during walking. • Favours one foot walking and/or standing. • Slight body condition score loss. |  |
| <p>Locomotion Score 4 – Severe lameness</p> <ul style="list-style-type: none"> • Walks very slowly – very frequent stops. • Very short painful steps. • Back: <ul style="list-style-type: none"> • Very arched standing. • Very arched walking. • Pronounced head bobbing. • Favours one foot walking and standing – extreme difficulty turning. • Substantial body condition score loss. • Frequently salivate and grind teeth. |  |

Figure 2: Locomotion scoring dairy cows (Source: Cook, University of Minnesota)

Summary

- Locomotion scoring is used to standardise the diagnosis of lameness and can be used to benchmark its incidence.
- Lameness can be scored on a scale from 1 to 4 based on the assessment of a number of characteristics while walking.
- Cows scoring 3 or 4 are classified as clinically lame, and if more than 10% of the herd is affected, professional advice should be sought.