# THE CHARACTERISTICS OF LAMENESS IN DAIRY COWS

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***Abstract***

*Lameness is considered one of the most important aspects of the animal health besides breeding problems and mastitis. This evaluation is based probably partially on the incidence of this clinical sign and the economical importance of accidental diseases.*
*In another sense lameness could have even a greater importance. Well established control protocols can be implemented regarding both mastitis and breeding problems, but not in the case of bovine lameness problems where such protocols need specification depending on the numerous factors such as raising conditions, forage management, the capacity of farmers to understand that high production is achieved with the price of functional efficiency of the animals.*
*In addition to the multitude of risk factors we have the permanent evolution of nutrition practice and management systems. The latter serve the best interest of man rather than cow comfort.*
*On the farm where the study has been developed cow lameness was around 20%, the conditions that generated lameness were the following: 5% sole ulcer, 5% heel erosion, 4% necrobacilosis, 2% interdigital dermatitis, 3% interdigital phlegmon, 1% claw deformity. The high percentage of lame cows suggest the presence of subclinical laminitis in the herd, and it is advisable to note these conditions in special records, and develop a more extensive investigation, including monitoring the nutrition management.(1)*
*Other painful conditions such as renal colic or abomasum dysplasia are not as frequent as lameness.*

***Key words***: *attitudes, bovines, gait, lameness, leg*.

## INTRODUCTION

Cheston said that the veterinary who faces lameness issues in a bovine farm needs to examine the management problems of the farm than to treat a long series of individual cases. (2)
Lameness is a clinical sign and should not be regarded as disease or disorder.
The main reader that is in view here is the veterinary who practices bovine surgery, but also the farmer who is concerned with the health of his herd and the financial performances of the farm.

The pictures are an important component of the communication process with those whom this article is addressed to, as they are suggestive in presenting the clinical cases.

## MATERIALS AND METHODS

Bovines in a dairy herd half breed Holstein – Friesian, inspection, palpation.

## RESULTS AND DISCUSSIONS

Starting from the function of the limbs lameness can be divided according to the two phases of the stride: lameness in the phase of suspension and lameness in the phase of support. We can add to these the mixt lameness that pertain to both suspension and support.
In bovines, the most frequent lameness occurs in the support phase. These dominate the symptomatic frame of pedal disorders and have a significant value of anatomoclinical diagnosis.(3)
The intensity of lameness vary from a hindrance in walking, to walking with three legs. Bovines are very resistant to pain, and because of this, pain has to be excruciating so that a cow should limp on a soft surface.
Therefore, it is highly recommended that lameness in bovines should be diagnosed on firm, level and non-slippery ground surface.
A lame cow prefers decubitus (Figure1), and when a cow swings its limb away from the body it is attempting to relieve pain in the outside claw (Figure 2).

Figure 1. Cow prefers decubitus

Figure 2. Cow swings its limb away from the body

The gait with the sick limb is hesitant, as it is out of support, and the back is arched more or less, according to the intensity of the pain. (Figure 3)

Figure 3. Hesitant gait and arched back

Determining the seat of lameness and its nature has required the systematic exam of all the anatomical components of the sick limb, starting with the emergence with the body and finishing with the examination of claws. (Figure 4)

Figure 4. Examination of claws

In order to diagnose lameness a cow should be observed from each side: from the front and behind, when standing quietly and when walking. Than it should be observed when it turns to the left and then to the right.
Normal stride has three phases:

1. Weight-bearing phase
2. Forward phase (Protraction)
3. Backward phase (Retraction)

During the weight-bearing phase, the bearing surface of heel-bulb junction of a hind limb normally touches the ground first. This is followed by the abaxial part of the weight-bearing margin of the wall and then the toe. Finally, the bearing surface of the claw will slide forward to an extent, depending on the friction generated by the ground surface.
The protraction phase is when the limb swings forward and then back to weight-bearing.The retraction phase is the backward swing of the limb.
A healthy cow walks with a level spine and places her hind feet almost exactly onto the same spot as the fore feet.
According to the place of the pain there can be observed different attitudes of the bovines while walking.
Thus in acute laminitis the cow can protract the hind limbs (camping forward), and the forelimbs are retracted under its body (camping back) – Figure 5.

Figure 5. Camping forward and camping back

The pain in the heel bulbs or posterior region of the sole determines the cow to retract its hind limbs. Such a situation can occur in hip arthritis (Figure 6)

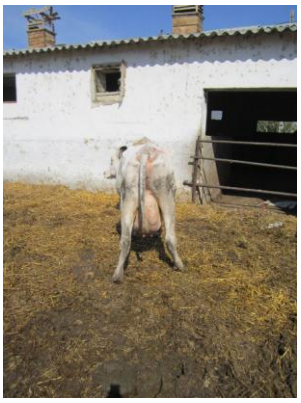

Figure 6. The pain in the heel bulbs

A lame cow will hold its head lower than normal, will spend less time in bearing the weight on the affected limb and the stride will be shorter. (Figure 7).

Figure 7. A lame cow will hold its head lower than normal

”Cow Hock” Posture either in the forelimbs or the hind limbs is an indicator of severe pain (Figure 8)

Figure 8. ”Cow Hock” Posture

Hanging leg lameness is a reaction to extreme pain as would occur from septic arthritis of the pedal joint or a fractured pedal bone (Figure 9).

Figure 9. Hanging leg lameness is a reaction to extreme pain

If an animal stands or walks with its feet close together it is „walking narrow." This is often the sign of the seat of lameness being located in the inside (medial) claw. Cattle with subclinical laminitis mainly in the medial claws will walk narrow. (Figure 10)

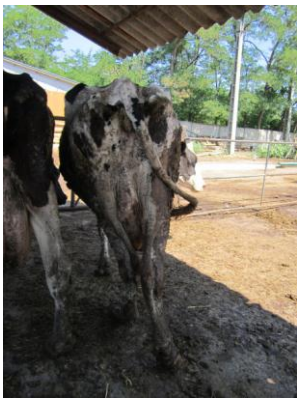

Figure 10. Walking narrow

In order to diagnose lameness in cows it has been designed a score system from 1 to 5 recommended for current use on the farm (2):

**Locomotion score 1**
Clinical Description
Normal
Description: Stands and walks normally. All feet placed with purpose.
Back Posture Standing: Flat / Back Posture Walking: Flat
**Locomotion Score 2**
Clinical Description
Mildly Lame
Description: Stands with flat back, but arches when walks. Gait is slightly abnormal.
Back Posture Standing: Flat / Back Posture Walking: Arched
**Locomotion Score 3**
Clinical Description
Moderately Lame
Description: Stands and walks with an arched back. Short strides with one or more legs.
Back Posture Standing: Arched / Back Posture Walking: Arched
**Locomotion Score 4**
Clinical Description
Lame
Description: Arched back standing and walking. Favoring one or more limbs but can still bear some weight on them.
Back Posture Standing: Arched/ Back Posture Walking: Arched
**Locomotion Score 5**
Clinical Description
Severely Lame
Description: Arched back, refuses to bear weight on one limb. May refuse or have great difficulty moving from lying position.
Back Posture Standing: Arched / Back Posture Walking: Arched

## CONCLUSION

The incidence of lameness in dairy herds probably ranges from 0 to 60%. An annual incidence of over 10% should be regarded as a problem herd and foot health should be monitored very closely. If the incidence of sole ulcer, toe ulcer and white line disease together exceeds 5-10% in a herd, this would be a strong indication that subclinical laminitis is present and a comprehensive investigation is justifiable on economic grounds.
Scoring the Severity of Lameness.

The severity and duration of a lameness should be recorded in the health records of any heard with a claw health problem.

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