



Interpretation Of Bovine Locomotion Scoring Results, Understanding Pain In Digits And Its Outcome

Ahmadreza Mohamadnia

Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Iran. mohamadnia@um.ac.ir

Lameness is one of the most important causes of comfort loss in dairy herds. Pain and its associated responses to pain maybe the most important cause of lameness losses that classified as the third cause of economic losses in dairy herds. Pain is the first step of pathological events that starts in cattle feet as about 80% of lameness originates from digits especially lateral digit of the hind limbs. Pathological cascades in bovine digits following sinking of the third phalanx after coriosis are the most important cause of pain, however other inflammations of the digital skin (Interdigital space and heel area have a special concern in this inflammation) also play an important role in painful conditions of the digits. These nociceptive pain may result in gait alterations and also indirect responses like lowering social order, feed consumption, lying behavior etc. Assessment of pain may be done by hematological, behavioral and measuring its reflexes in dairy farms. Because of easier nature of behavioral assessment of pain different locomotion scoring systems were used during past years.

Some special features of cattle response to pain like lowing walking speed, alterations of gait (lowering its height, swing alterations, track up changes.....), changing in body posture, in standing and walking cows were used during past years and made different scoring systems. Five point scoring system that first used by Sprecher et al. is sidely used in Iran and other countries to assess lameness status of the herds. Some common problems following scoring were seen in different farms that can be listed as: a) High score cows necessarily do not show lesions in the hooves, b) Very large difference between and within persons were seen in cow scoring, c) Some lesions do not necessarily increase locomotion scores, D) Other pain criteria (hormonal changes, biochemical changes) do not follow scoring pattern in the herds etc. All of these findings sometime make locomotion scoring as a controversial method in dairy farm management. Locomotion scoring is done by changes in



physical finding of the gait and body posture. For example in point 3 of a 5 point locomotion scoring observer can see the shortening of the stride with more cautious gaits besides slowing walking speed. These findings are very qualitative as normal gait consist of different criteria that mostly phase of stride is the only important factor that may pay attention in walking of the animal (this is what is normally done by farmers and this is why most estimation of the farmers are much less than true incidence of the lameness in the herds) and other features of a stride like its height, landing, abduction, pattern of swinging ignores and finally the resulted in just very low agreement between different persons in cattle scoring.

Interval of scoring is another controversial issue in lameness management, the answer to the fact that scoring is not a tool for detection of lesions and is just a way for assessing pain in the walking animal maybe a clue for doing better scoring and analysis. Place of scoring, emotional and comfort status of the person, walking surfaces of the cows, time of the day and so many other factors may affect this subjective method and make its interpretation much more difficult. This is why many farmers and veterinarian move toward using more machine base systems for cattle scoring and its analysis.

This current presentation focuses on different aspects of locomotion scoring usage, interpretation of the results and descriptions about possible reasons for differences between scoring results in a dairy farm.

Keywords:Lameness, Cow, Locomotion scoring, Agreement, Hoof lesions.