

Mobility Scoring of Finished Cattle



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KEYWORDS

• Cattle • Fatigued cattle syndrome • Lameness • Mobility • Scoring system

KEY POINTS

- Lameness in cattle is detrimental to animal welfare and can negatively affect a variety of production parameters, leading to significant economic loss.
- Multiple locomotion scoring systems are available to assess lameness in dairy cattle, which vary in the number and type of gait attributes assessed.
- There has been little research conducted to understand, measure, and monitor mobility in finished cattle.
- The North American Meat Institute Mobility Scoring System is a useful tool to measure mobility in finished cattle.
- Recent events within the beef industry have led to increased industry efforts to monitor finished cattle mobility.

INTRODUCTION

Mobility and, more specifically, lameness, in all food animal species has been a long-term focus within the livestock industry because it has a significant impact on animal well-being and production parameters. Lameness has been identified by stakeholders in the dairy industry as the most important welfare and production issue affecting dairy cattle.^{1,2} Lameness is an abnormal gait or stance. It is normally caused by pain that can result from a myriad of pathologic conditions.³ Rather than being a disease itself, lameness is a description of abnormal behavior that is a symptom resulting from an underlying health condition.⁴ Regardless of the reasons that cattle express conditions of lameness, lameness causes pain to the animal⁵ and can negatively affect a variety

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of production parameters, such as milk yield,^{6,7} and is often associated with reduced reproductive efficiency^{8,9} in dairy cattle that can ultimately lead to significant economic loss.^{10,11}

The occurrence of lameness in dairy cattle varies between herds because it is affected by multiple environmental and management factors. A benchmarking study on cow comfort in North American freestall dairies published by von Keyserlingk and colleagues¹² reported that the prevalence of lameness averaged from 30% to 55%, varying by geographic region. Although finished cattle can certainly suffer from lameness and it can have significant economic impacts on feedyards,¹³ impaired mobility has been relatively unstudied in finished cattle compared with dairy cattle. A recent survey of feedlot managers, consulting veterinarians, and nutritionists was conducted to assess the perception of lameness within the feedlot segment of the beef cattle industry.¹⁴ On average, survey respondents estimated that lameness incidence in the feedyard was 3.8% and contributed to less than 10% of total feedyard mortality. Prior research indicates that dairy producers usually underestimate the percentage of lame cows existent in their operations.^{15,16} A more accurate estimate of the degree of lameness or its prevalence in a herd may be achieved through the use of locomotion scoring by experienced or trained observers. Although perhaps not as prevalent in finished cattle, mobility issues in feedlot cattle can affect animal welfare and have a significant economic impact via increased costs from treatment, salvage loss, and potential performance losses.^{13,17}

GROWING AWARENESS OF FINISHED CATTLE MOBILITY ISSUES

Observation of cattle arriving at packing plants during the summer of 2013 rapidly heightened the focus on mobility issues. At that time, there were anecdotal reports within the meat processing community of increased numbers of market-ready cattle delivered to packing plants that, although ambulatory on arrival, were unable or unwilling to walk at some time during their lairage at the plant. This ranged from a few animals in a lot (usually a lot is defined as a group or pen from a specific origin) exhibiting what appeared to be stiffness and/or sore feet, to most of a lot exhibiting this type of impairment. In addition, some individual animals exhibited such extreme mobility impairment that they were described as statue-like. Cattle displaying this type of altered gait behavior were often unable to keep up with contemporaries in their respective groups; the separation of which caused additional stress to the animal but also negatively affected operational efficiencies at the packing plant. In 2006, Dr Grandin^{18,19} made similar observations in 3 different groups of cattle arriving at packing plants when temperatures were elevated above 90°F (32°C). Grandin reported that approximately 5% to 10% of cattle were panting from each truckload observed, some lying down and open-mouth breathing (ie, panting hard with their tongues extended), and some acting stiff and arthritic.

During the summer of 2013, the National Cattlemen's Beef Association (NCBA) held several industry discussions on the topic of cattle welfare, specifically highlighting perceived issues with beta-adrenergic agonist (BAA) growth promotants because this was an underlying concern with some of the impaired mobility observations. At the final NCBA meeting, video evidence of cattle with impaired mobility at packing plants was presented. This led to a cascade of events, resulting in the packing industry's voluntary refusal to purchase cattle fed with zilpaterol hydrochloride (Zilmax; Merck Animal Health; Desoto, KS, USA). This reaction was due to a perception that zilpaterol was the causative or common factor responsible for the reduced mobility of cattle observed. Unfortunately, at that time, neither the cattle nor

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