Lameness morbidity and association of locomotion score and diagnosis with case outcome in beef cattle in Great Plains feedlots

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Introduction

This was a dynamic population longitudinal study to determine the association of lameness diagnosis and locomotion score at time of initial lameness diagnosis with case outcome in feedlot cattle, and provide beef cattle feedlot lameness morbidity, mortality, and realizer incidence due to different lameness etiologies.

Materials and Methods

Cattle health records were maintained for analysis from 6 participating feedlots located in Kansas and Nebraska for a year by trained personnel. The initial study population was 245,494 head of feedlot cattle, with 524,780 animal arrivals and 527,220 animal departures recorded over the 12-month study. Additional treatments and outcome of each individual cattle lameness case were tracked until either the animal was transported for harvest with its entire original pen, realized, or the animal died.

Results

Lameness morbidity incidence was 1.04 cases per 100 animal-years; lameness mortality was 0.397 cases per 100 animal-years. Cattle locomotion score (LMS; scale of 0 to 3 at time of initial diagnosis) were LMS1 (22% of lameness cases), LMS2 (31%), and LMS3 (22%). Twenty-four percent of the lameness cases were not assigned a locomotion score (NS). Mortality rates were greatest for LMS3 (33.0%) and NS (31.3%), and were least for LMS1 (10.0%) with LMS2 (19.1%) being intermediate ($P<0.05$).

Significance

This research has contributed to reported lameness morbidity, mortality, and realizer incidence for cattle in US feedyards. These data report the differences in observed case outcomes for lame cattle diagnosed by etiology of lameness and LMS.

Are all bovine herpesvirus-1 reproductive disease events vaccine-induced?

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Introduction

Modified-live virus (MLV) bovine herpesvirus 1 (BHV-1) vaccines have been a major part of the program to the prevention of reproductive disease in cattle. However, their use (or misuse) continues to result in major abortion storms. The results of 20 additional cases with reproductive losses are described where the single nucleotide polymorphism (SNP) analysis was done to identify the source.

Materials and Methods

Case material from 12 BHV-1 reproductive cases from 2013-2015 submitted to the South Dakota State University Animal Disease Research and Diagnostic Laboratory was analyzed. Additionally, 3 BHV-1 cases from Colorado, 2 BHV-1 cases from North Dakota, 2 BHV-1 cases from Wyoming, and 1 BHV-1 case from Wisconsin were analyzed. PCR was performed on the tissues for BHV-1. The PCR products were

sequenced and genetic analysis done at the molecular diagnostics laboratory at SDSU. Single nucleotide polymorphism (SNP) analysis was done on the sequence data.

Results

In all cases, the SNP patterns were identical to BHV-1 vaccine strains.

Significance

Use of vaccines containing MLV BHV-1 has inherent risks to reproductive fitness. In most of these cases, well-vaccinated pregnant animals were revaccinated according to label directions. With the addition of these cases along with the 4 cases described in the research at AABP 2015, over 20 documented cases of reproductive loss have occurred where the SNP patterns are indicative of BHV-1 vaccine strains. In summary, MLV BHV-1 vaccines must be used judiciously and their use during pregnancy needs to be reviewed closely under veterinary supervision. In spite of the label, reproductive issues still occur.

Survey of lame cow management practices on California dairies

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Introduction

Lameness is one of the main diseases on dairy farms, causing annual losses of up to $75/cow. Consequently, early lameness identification and treatment could decrease lameness prevalence. The objective of this study was to describe lame cow management practices on California dairies.

Materials and Methods

Seventeen free-stall and 5 drylot dairies were enrolled in the study. Most (n=21) enrolled herds were Holstein and ranged in size from 1,000 to 10,000 cows. Researchers filled out a survey tool through observations and a semi-structured interview process with managers, hoof trimmers, and dairy employees involved in lame cow identification. On enrolled dairies, therapeutic hoof trimming was performed by in-house employees (n=14) or outside service providers (n=8). Data collected was entered into spreadsheets for data analysis (Microsoft Office Excel; 2010).

Results

Lame cow identification took place every day (n=8), less than 5 days a week (n=11) or 2 times a month (n=3). Pushers (n=15), hoof trimmers (n=11), milkers (n=6), and breeders (n=3) were involved in lame cow identification. On 9 dairies, either the pusher (n=5) or the hoof trimmer (n=4) was the sole person responsible for lame cow identification. All cows selected for therapeutic trimming showed claudication. Other lameness indicators observed were short steps (69%), back arch (56%), abnormal claw (44%), or head bouncing (19%). On 3 dairies, claudication was the only lameness indicator evaluated whereas on 9 dairies, 4 of the aforementioned indicators were observed. Most dairies serviced by an in-house hoof trimmer (82 %) moved cows to a holding lameness pen for treatment as soon as they were identified. On all other dairies, lame cows were treated on scheduled days (n=7). Cows stayed in the holding pen (mean (range)) 5.8 (1 to 24) hours before trimming intervention. The lame cow holding pen was located near the milking parlor and provided cows with: a) shade, water and feed (n=6); b) shade and water (n=7); c) food and water (n=1); d) only shade (n=4); e) only water (n=2); f) or nothing (n=2). Hoof trimmers perceived that the 3 most common reasons for lameness were: a) stepping on sharp objects such as nails, needles or stones (n=17), b) heat stress (n=11), c) abrasive floor surface and excessive claw humidity (n=11). Proposed solutions to reduce lameness prevalence were: a) removing sharp objects from pens and walking alleys (n=17), b) increase in the frequency of lameness identification and hoof trimming work (n=14), and c) improve cow comfort (i.e. heat abatement, better bedding, rubber mats on walkways; n=13).

Significance

Our results indicated that lame cow identification relies greatly on pushers. However, the pusher can only perform a good evaluation of the last group of cows walking to the parlor. In-house hoof trimmers were able to provide therapeutic trimming with more frequency than outside service providers. Removal of sharp objects on walkways and feed lanes might be an important strategy to reduce lameness prevalence on some dairies.