

# Chute behavior of cattle handled using acclimation and low-stress handling techniques

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## Introduction

Bovine Respiratory Disease is a multifactorial syndrome, which negatively impacts performance and welfare among cattle on feed. BRD is associated with viral and bacterial pathogens; but other causal factors include management techniques and environmental stresses. Immune systems of many species, including bovines, have the capability to become compromised by stress. Low-stress cattle handling (LSCH) and acclimation methods are thought to lower stress and may potentially benefit the health and performance of feedlot cattle. Low stress handling methods use the natural behavior and innate responses of cattle to minimize negative consequences due to handler interactions. Acclimation methods familiarize cattle with their environment and, therefore, decrease stress. It was hypothesized that cattle that were acclimated and handled with LSCH techniques would vocalize less and display calmer behavior in a squeeze chute compared to cattle that had not been acclimated and had been handled conventionally.

## Materials and Methods

Cattle were assigned to one of two treatments by pen, five pens in control and five pens in LSCH. During acclimation (about 45-60 min total), cattle were encouraged to form a cohesive herd in the home pen, moved as a herd around the pen and then moved through the vaccination shed and chute. Upon return to the home pen, cattle were encouraged to move to the waterer and feed bunk. Acclimation occurred once daily, beginning the day after arrival and 2 more times following initial vaccinations (Day 1), but within the first 5 days after Day 1. During the acclimation period, control cattle were not handled by the researchers. On Day 3, all cattle were vaccinated. Two Sony Handicams were placed to capture the side and front area of the chute. PlayMemories Home

was used to cut and splice together the two views for each calf. These edited videos were then blinded in a randomized order and observed by a single trained observer. Video was scored using an ethogram for frequency of vocalizations, chute behavior (1=calm; 2=restless; 3=frequent contact with chute; 4=violent struggling) and exit behavior (1=walk; 2=run/jump; 3=freeze) and whether a calf fell upon exiting (Y/N). Vocalization frequencies were analyzed using a generalized linear model with treatment as a fixed effect and calf (pen) as a random effect. Chute and exit scores and whether a calf fell were analyzed using a probit regression model with treatment as a fixed effect to assess probability of calves being assigned a particular score (chute and exit scores) and probability of calves falling upon exiting the chute.

## Results

There was no observed difference in vocalization frequencies between control and LSCH ( $2.04 \pm 0.27$  and  $2.63 \pm 0.47$ , respectively;  $p=0.37$ ). Similarly, there was no observed difference in chute scores ( $p=0.10$ ), exit scores ( $p=0.39$ ), or probability of falling upon exit ( $p=0.25$ ).

## Significance

Our results demonstrated no observed effect of LSCH on chute behavior on Day 3 after arrival. Based on these preliminary results, one cannot conclude that acclimation and LSCH techniques affect chute behavior as early as the enrollment collection date. Further analysis at later time points in the production cycle, following more extensive acclimation and LSCH processes, will provide important information on potential effects of these techniques.