

# Factors associated with lactation in non-pregnant feedlot heifer mortalities

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## Introduction

The contamination of carcasses from milk is a sanitation concern in cattle packing plants. Previous research indicated the administration of estradiol and progesterone over a period of time, followed by injection of dexamethasone, may induce lactation in nulliparous dairy heifers. The objective of this study was to determine potential factors associated with lactation in feedlot heifer mortalities at one Kansas feedlot.

## Materials and methods

Eighty-four heifers were necropsied to determine lesions across multiple systems; 82 heifers that exhibited no signs of current or previous parturition at time of necropsy were included in the study, while 2 were excluded, due to observation of pregnancy at time of necropsy. Thirty-three (40.2%) nulliparous heifers were lactating, and 49 were non-lactating. Each heifer included in the study had been fed melengestrol acetate daily. Total days on feed, processing information at the times of feedlot arrival and re-implanting, as well as individual treatment records, were recorded as factors for each heifer. The processing information included arrival weight, arrival implant type, whether dexamethasone and prostaglandin F<sub>2</sub> alpha were administered at arrival, and the type of terminal implant. From the treatment records, treatments with dexamethasone were recorded. Using the glm function from the stats package in RStudio, a general linear multivariable model was created to determine which factors were associated with the outcome of interest (lactating). The model was built in an iterative fashion with the final model only including significant ( $P < 0.05$ ) effects.

## Results

Most risk factors, such as implant type, arrival weight and prostaglandin F<sub>2</sub> alpha and dexamethasone administration, were not associated ( $P > 0.05$ ) with lactation for this population. Days on feed  $\geq 30$  at time of necropsy was significantly associated ( $P = 0.02$ ) with lactation. The probability of lactation was 47% for those with total days on feed  $\geq 30$  at time of necropsy, and 17% for those with  $< 30$  total days on feed at time of necropsy.

## Significance

The results from this study indicate that feedlot heifers have an increased probability of lactating once they have reached  $\geq 30$  days on feed. Additionally, further research on the association of additional risk factors with lactation may be useful.

