

# Monitoring of Rumen pH in Cattle Pulled for Bovine Respiratory Disease Complex with Normal or Elevated Rectal Temperatures in a Commercial Feedlot

**D. U. Thomson, PhD, DVM; K. D. DeDonder; J. S. Nickell, DVM**  
*Department of Clinical Sciences, Kansas State University, Manhattan, KS*

## Introduction

Bovine Respiratory Disease Complex (BRDC) is the most costly disease to the beef industry. Acidosis in feeder cattle is also common and costly to the cattle feeder. Clinical signs such as depression, anorexia, and increased respiratory rate are similar for both BRDC and acidosis. It has been proposed that cattle exhibiting these clinical signs can be diagnosed between BRDC and acidosis once a rectal temperature has been taken at the hospital. Cattle exhibiting these clinical signs with normal rectal temperatures are many times diagnosed with acidosis and not treated for BRDC. Similar presenting cattle with elevated rectal temperatures are diagnosed with BRDC and subsequently treated with antimicrobials. The objective of this study was to monitor the rumen pH in cattle pulled to the hospital with clinical signs of BRDC regardless of rectal temperature.

## Materials and Methods

Sixty head of mixed breed feedlot steers and heifer were used to monitor the difference in rumen pH of cattle pulled for BRDC with normal or elevated rectal temperatures. Cattle exhibiting clinical signs of anorexia, depression and abnormal respiration patterns were identified in the home pen by trained personnel at a commercial feedyard in West Texas. Cattle were brought to a centralized hospital facility. Cattle were given a physical examination which included rectal temperature.

Rumenocentesis was conducted to obtain a rumen fluid sample from all cattle. Rumen pH was determined on site by the use of a calibrated hand held pH meter.

## Results

Sixteen of the 60 head pulled for BRDC exhibited rectal temperatures above 104°F. Average rumen pH for all 60 head of cattle pulled for BRDC was 6.01. Cattle with different rectal temperatures at time of BRDC treatment did not have different rumen pH values. Cattle exhibiting rectal temperature at or above 104° F had an average rumen pH of 5.95 while cattle with rectal temperatures below 104° F had an average rumen pH of 6.03 (P = .56). The rumen pH values were normal in both groups.

## Significance

Cattle pulled to the hospital system for BRDC treatment did not have different rumen pH values regardless of their rectal temperature. Acidosis and BRDC both cause anorexia due to an undefined period of feed refusal or decreased feed intake in cattle. Possibly by measuring rumen pH after anorexia was detectable, cattle may have been off feed for a period of time long enough for rumen pH to normalize due to decreased substrate available for rumen fermentation. More research in this area is warranted.