

# Measurement of Cardiac Troponin in Calves Affected with Respiratory Disease

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## Introduction

Current methods for diagnosis of bovine respiratory disease in field settings (observation, thoracic auscultation, rectal temperature) lack sensitivity. This results in misclassification of cattle having various diseases as “respiratory” and in the failure to identify some respiratory disease cases. We hypothesized that cardiac troponin would be increased in calves with respiratory disease because of increased cardiac work and injury from a variety of mechanisms.

## Materials and Methods

High risk calves (purchased from southeastern livestock sales and shipped to Kansas) were used for this study. Calves were monitored over a 42-day period for clinical disease. An I-STAT 1 hand-held blood analyzer was used to measure Troponin-I in nine calves free of respiratory disease and in seven calves with respiratory

disease subsequently confirmed at necropsy. A two-sample t-test was used to compare populations.

## Results

Troponin-I in healthy calves was  $0.006 \pm 0.01$  ng/ml. Troponin-I in calves having respiratory disease was  $0.04 \pm 0.04$  ng/ml. Troponin-I was significantly greater in calves having respiratory disease when compared with calves not having respiratory disease ( $P = 0.036$ ).

## Significance

Troponin may prove useful as a field test to more accurately select calves with cardiopulmonary disease. This may be useful in determining the severity, response to therapy, and prognosis of these calves. Early, accurate diagnosis will, in turn, direct therapy that may lessen distress associated with respiratory disease in cattle.