

# Kansas bovine anaplasmosis herd prevalence and management practice risk-factors associated with herd serostatus

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## Introduction

Bovine anaplasmosis is a hemolytic disease of cattle caused by *Anaplasma marginale* (*A.marginale*) which can cause anemia, adult-animal sudden death, abortion, and performance reduction. The objectives of this study were to estimate herd-level seroprevalence in Kansas cow-calf herds and assess management practices associated with herd serostatus.

## Materials and Methods

A cross-sectional random sampling of veterinarians and randomized herd within veterinarian represented Kansas beef herds. Blood samples were collected from randomly selected mature cows during routine processing between October 1, 2016 and March 1, 2017. A management survey accompanied sampling. Sample serostatus was determined by cELISA; operations which indicated use of vaccination for anaplasmosis were confirmed positive with *A.marginale*-specific polymerase chain reaction (PCR). True prevalence was calculated from apparent prevalence and advertised test sensitivity and specificity. Survey data underwent logistic regression analysis for calculation of odds ratios and confidence intervals.

## Results

The herd-level true seroprevalence of anaplasmosis in Kansas was 52.6% of cow-calf herds. Prevalence ranged from 17.0% of western Kansas herds to 87.2% of eastern Kansas herds. Vaccinated herds were more likely (OR=2.38; CI=1.16–4.85;  $P=0.02$ ) to be seropositive compared to non-vaccinated herds, and herds that utilized insecticide ear tags were more likely to be seropositive (OR=1.9; CI=1.42–2.55;  $P<0.01$ ) compared to herds which do not use this tool. Compared to operations that burned 0 to 20% of pastures, operations that burned 21 to 50% and >50% of pastures were more likely to be seropositive, OR=5.74 (CI=3.14–10.51;  $P<0.01$ ) and OR=4.78 (CI=2.33–10.17;  $P<0.01$ ), respectively.

## Significance

This study illuminates the current disease situation across Kansas and enables ongoing monitoring. Selected management practices may impact prevalence.