

## Significance

Program participation of 70% of regional dairy herds was achieved. Herd prevalence of Johne's disease was comparable to other regions in Canada, but lower than reported herd prevalence in the United States. RAMP scores were significantly higher for Y1 herds than Y2 herds and higher for EC positive herds compared to EC negative herds. It is encouraging that RAMP scores

decreased in year 2, suggesting that the AJDI had an impact on the Johne's disease risk. This decrease was more pronounced for EC positive versus EC negative herds, despite the veterinarians indicating that management plan recommendations were only moderately implemented. In the future, specific efforts to improve the adherence to program recommendations may further improve Johne's disease control.

# Risk factors in beef cattle for terminal rectal mucosa colonization of *Escherichia coli* O157:H7

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## Introduction

*Escherichia coli* O157:H7 (STEC O157) is an important foodborne pathogen of humans. Cattle are sub-clinically colonized with STEC O157 at the terminal rectal mucosa (TRM). Live cattle serve as an important reservoir for human exposure, but it is unknown if health or performance characteristics of cattle predict their risk for colonization. Our objective was to test if disease during the finishing phase, growth performance, or carcass quality measurements at harvest increased the odds of *E. coli* TRM colonization at the time of slaughter.

## Materials and Methods

Data were analyzed from 751 steers assigned to 94 pens (8 animals/pen) from 2 separate vaccine randomized controlled trials in which TRM samples taken at slaughter were cultured for STEC O157. Health records from the day of arrival at the feedlot until slaughter were obtained, as well as growth performance and carcass quality characteristics. Data were analyzed using mul-

tilevel multivariable logistic regression in a generalized linear mixed model with random effects of study and pen. Vaccination against STEC O157 was treated as a fixed effect to adjust for potential confounding.

## Results

We found no difference in the odds for TRM colonization related to hot carcass weight ( $p = 0.33$ ), feedlot-ending live weight ( $p = 0.27$ ), marbling score ( $p = 0.71$ ), longissimus muscle area ( $p = 0.29$ ), or liver abscess score ( $p = 0.49$ ). Also, there was no significant difference in the odds for TRM colonization related to respiratory disease treatment ( $p = 0.35$ ) or foot rot ( $p = 0.40$ ). Vaccination against STEC O157 did significantly explain the odds for TRM colonization (OR= 0.40,  $p = 0.003$ ).

## Significance

These findings suggest that colonization of cattle with STEC O157 is not explained by their health or performance characteristics.