

Campylobacter jejuni in the Alberta Beef Industry

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Introduction

Campylobacter jejuni is a bacterium known to cause enteritis in people. In Alberta, campylobacteriosis is the most common foodborne disease and the third most common reportable disease after chicken pox and hepatitis C. Poultry are considered to be a primary source of human-pathogenic *C. jejuni*; however other domestic animals species may be important sources or reservoirs of this bacterium. The purpose of this project was to estimate the prevalence of *Campylobacter* species in feedlot cattle feces and retail ground beef in southern Alberta, and to identify *C. jejuni* isolates for future molecular characterization (DNA microarray).

Materials and Methods

Fresh cattle feces were collected from seven commercial feedlots (n=2800, 400 per feedlot) in Alberta. Within the same temporal frame, 1200 packages of regular or lean ground beef were purchased from 60 retail grocery stores (within three cities) in southern Alberta. The feedlot cattle feces and retail ground beef were cultured for *Campylobacter* using enrichment techniques.

A subset of the ground beef samples were subjected to direct PCR for *Campylobacter* species including *C. jejuni*.

Results

Preliminary results indicate that while relatively high levels of *Campylobacter* species were present in cattle feces (76-95% positive cultures depending on feedlot), not all of the positive isolates were *C. jejuni*. In addition, the level of *Campylobacter* species in retail ground beef was extremely low (less than 1% by culture).

Significance

This project showed a high prevalence *Campylobacter* species in cattle feces from commercial feedlots in Alberta, and was able to also estimate the prevalence of *Campylobacter jejuni*, bacteria of public health importance, in those samples. The retail ground beef survey supported food safety practices in the province as a very low prevalence of *Campylobacter* was identified using culture methodology.