

Jennyka Hallewell

I am completing a PhD in Biomolecular Science at the University of Lethbridge under the supervision of Dr. Tim McAllister and Dr. James Thomas. My research is stationed at the Lethbridge Research Centre under joint collaboration with Agriculture and Agri-Food Canada and Alberta Agriculture and Rural Development. My Master's degree in Biochemistry was also completed at the University of Lethbridge in collaboration with the Public Health Agency of Canada and focused on identification and characterization of shiga toxin-producing prophages in lineages associated with *E. coli* O157:H7.

My current research investigates the impact of diet on fecal shedding of *E. coli* O157:H7 in cattle and control of the organism using bacteriophages (phages). Cattle harbour *E. coli* O157:H7 asymptomatically and contaminated ground beef has been implicated as a source in multiple *E. coli* O157:H7 outbreaks resulting in massive recalls and substantial economic loss to the beef industry. Understanding factors that contribute to shedding of this pathogen and creating methods to reduce *E. coli* O157:H7 in cattle will aid in improving food safety and subsequent effects on human health. Phages are natural predators of bacteria, ubiquitous in the environment including foods and are prime candidates for reduction of pathogens since they are self-replicating, self-limiting and very specific to their targets. I am currently identifying and characterizing naturally occurring phages with highly lytic potential towards *E. coli* O157:H7 from cattle. I intend to select a cocktail of efficacious phages for control of the *E. coli* O157:H7 in ground beef.

Current Publications:

- Hallewell, J., McAllister, T.A., Thomas, J., Booker, C.W., Hannon, S., Jim, G.K., Burciaga-Robles, L.O., May, M.L., Peterson, R.E., Flaig, C., Hussey, E.M., and K. Stanford. 2012. An evaluation of the effects of wheat or corn distillers dried grain with solubles on feedlot performance and fecal shedding and persistence of *Escherichia coli* O157:H7. *Journal of Animal Science* (Released Online).
- Hallewell, J., Barbieri, L.R., Thomas, J.E., Stanford, K. and T.A. McAllister. 2012. Fecal shedding of *Escherichia coli* O157:H7 in inoculated cattle fed corn or wheat distillers' dried grain with solubles. *Journal of Food Protection* (Submitted).

Current Conferences:

- Insights into use of DDGS in Western Canadian feedlot diets. June 9, 2011, Lethbridge, Alberta. Alberta Livestock and Meat Agency (ALMA)
- 46th Annual Pacific Northwest Animal Nutrition conference. Oct 4-5, 2011. Portland, Oregon.

Current Scholarships/Awards:

Women's Scholars Award; Alberta Profiling Award; GSA travel award; Graduate Student Counsel Honarium; 3rd place award in graduate poster competition at 46th Annual Pacific Northwest Animal Nutrition conference.