**Holly Gray**

PhD student Holly Gray’s interest in the red meat industry was sparked by growing up on her family’s lifestyle block in the Wairarapa, followed by studying for a BSc double major in microbiology and statistics at Massey University.

A Master of Science in microbiology followed and now Holly, 23, is in the first year of a three year PhD project at the Molecular Epidemiology and Public Health Laboratory at the Hopkirk Research Institute in Palmerston North.

She is undertaking research into Shiga toxin-producing *Escherichia coli* (STEC) - a critical area of study for the red meat sector as this foodborne pathogen can result in serious illness. Her PhD stipend is being supported by Massey University, the New Zealand Food Safety Science and Research Centre and through MIA, which provides a scholarship of $10,000 per annum.

Infection can occur after eating any product contaminated with STEC, particularly raw or undercooked meat. Cattle are asymptomatic carriers of STEC. A key focus of Holly’s studies is how the pathogen may survive all the robust measures taken throughout the meat processing chain.

“New Zealand exports large quantities of beef and this is a very nasty bacteria that can lead to significant clinical disease,” she says. “There is zero tolerance for finding certain STEC types in meat exported to some countries. Part of my project is looking at meat processing. How might those STEC types survive all the interventions? I am looking at specific STEC serogroups and how they may persist and grow and survive.

“In New Zealand, we are careful not to have high levels of the unwanted serogroups of STEC on our final beef products and that no food-borne outbreaks have been documented from home-grown beef products. This demonstrates the importance of New Zealand continuing to invest in this area to ensure it stays that way.”

Holly says that, along with the funding, the mentoring provided through her relationship with MIA is very valuable.

“I’m making really good connections with many different people with different knowledge bases. I can ask them questions about different aspects of meat processing. I have already asked Kaylene Larking (MIA partnership manager) some questions and she has been very helpful.”

Holly’s supervisory team consists of supervisors from Massey University (Dr Sara Burgess, Professor Patrick Biggs, Dr Adrian Cookson - with AgResearch - Distinguished Professor Nigel French, Dr Anne Midwinter) with additional advisor Senior Scientist Jackie Wright (Institute of Environmental Science and Research).

“I’m in very good hands and I am loving the work. The research is very industry based and I’m aware that there are so many different avenues I could go down in terms of a career. I am very interested to see what doors open through my research and the industry connection. I would also be very interested in teaching and supervising postgraduate students in their research.”

The MIA provides an award of $5,000 a year for each year of study for its undergraduate scholars and $10,000 a year for each year of study for post-graduates.