

Prevalence of Environmentally Important Parasites and Bacteria in Alberta Hogs

N.J. Guselle, C. Carron and M.E. Olson

Gastrointestinal Sciences Research Group, University of Calgary, Calgary, AB T2N 4N1
Email: guselle@ucalgary.ca or molson@ucalgary.ca

Background: There is an increasing concern about the generation of fecal waste by swine and the distribution of waste on fields. One of the major concerns is the transmission of certain parasitic (*Giardia lamblia*, *Cryptosporidium parvum*, *Ascaris suum*, and *Isospora suis*) and bacterial (*E. coli* O157:H7 and *Salmonella spp.*) pathogens to humans and other animals. This research will provide information to assure the public that hog production is environmentally sustainable and does not place the public at risk.

Methods: Alberta hog operations (n=50) were visited and samples were collected from all age groups of hogs. Fecal samples from individual pens and slurry samples from indoor fecal pits and outdoor lagoons were collected. Water provided to the hogs was sampled and soil from the site of most recent slurry spread was collected. Bacteria (*E. coli* O157:H7 and *Salmonella spp.*) were isolated on selective media and serotyped. *A. suum* and *I. Suis* were isolated using sodium nitrate floatation. *Giardia* and *Cryptosporidium* were recovered by sucrose centrifugation and stained with monoclonal (FITC) antibodies.

Results: Preliminary results indicate that the parasites are age group dependent and that the bacterial isolates are not age group dependent. *Giardia* and *C. parvum* were recovered from the slurry storage pits/lagoons, with low prevalence, however, no parasites were recovered from soil or water samples.

Conclusions: Due to the overall low prevalence of the parasitic and bacterial pathogens, swine fecal waste and the distribution of it on fields may not pose a significant threat to humans and other animals.

Implications: Some of the parasitic and bacterial pathogens found in pigs are potentially infectious to humans however, there is a low risk of transmission.

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