Using two commercial kits for detection of *Toxoplasma* in lightly infected swine.

Parker S.*¹, Gajadhar A.², Forbes L.²

¹ Western College of Veterinary Medicine, University of Saskatchewan  
² Centre for Foodborne and Animal Parasitology, Canadian Food Inspection Agency, Saskatoon.

* 52 Campus Dr, Saskatoon, SK, CANADA S7N 2B4  
e-mail: sarah.parker@usask.ca  
Fax: 1.306.966.7159

*Toxoplasma* is a zoonotic parasite that infects most mammals including swine. Illness is generally serious in immunocompromised hosts and abortion or congenital defects can occur if women are infected during pregnancy. An important route of infection for people is ingestion of undercooked meat containing *Toxoplasma* cysts. Commercial kits exist for the detection of anti-*Toxoplasma* antibodies in sera and meat juice, but their performance characteristics in lightly infected animals are not well understood. An aspect of test performance which will affect test sensitivity and specificity is repeatability. A number of factors can affect repeatability, including sample matrix consistency, repetition ease of test performance and variability of test kit components. In this study, two commercially available kits (ELISA and MAT) were evaluated. Ten commercially raised pigs were infected with low doses of *Toxoplasma* oocysts; sera were collected through the trial period and meat samples were collected following euthanasia of the pigs. Using sera, the MAT detected all infected pigs at 2 weeks post-infection as compared to the ELISA at 3 weeks post infection. Using meat juice samples, at the kit recommended dilution and cut-off levels, the ELISA failed to detect one of the pigs as positive. Repeatability of both kits was evaluated using a subset of sera and a subset of meat juice samples. Meat juice samples were heterogeneous and contributed to repeatability issues. With the use of automated ELISA washing, repeatability improved. Initial evaluation suggests that the commercial MAT kit may be preferable to this ELISA kit when testing lightly infected pigs. Further work to evaluate other ELISA kits and an appropriate cut-off level for lightly infected animals needs to be carried out.