Co-infection of pigs with *Taenia solium* cysticercosis and gastrointestinal parasites in Eastern and Western Uganda
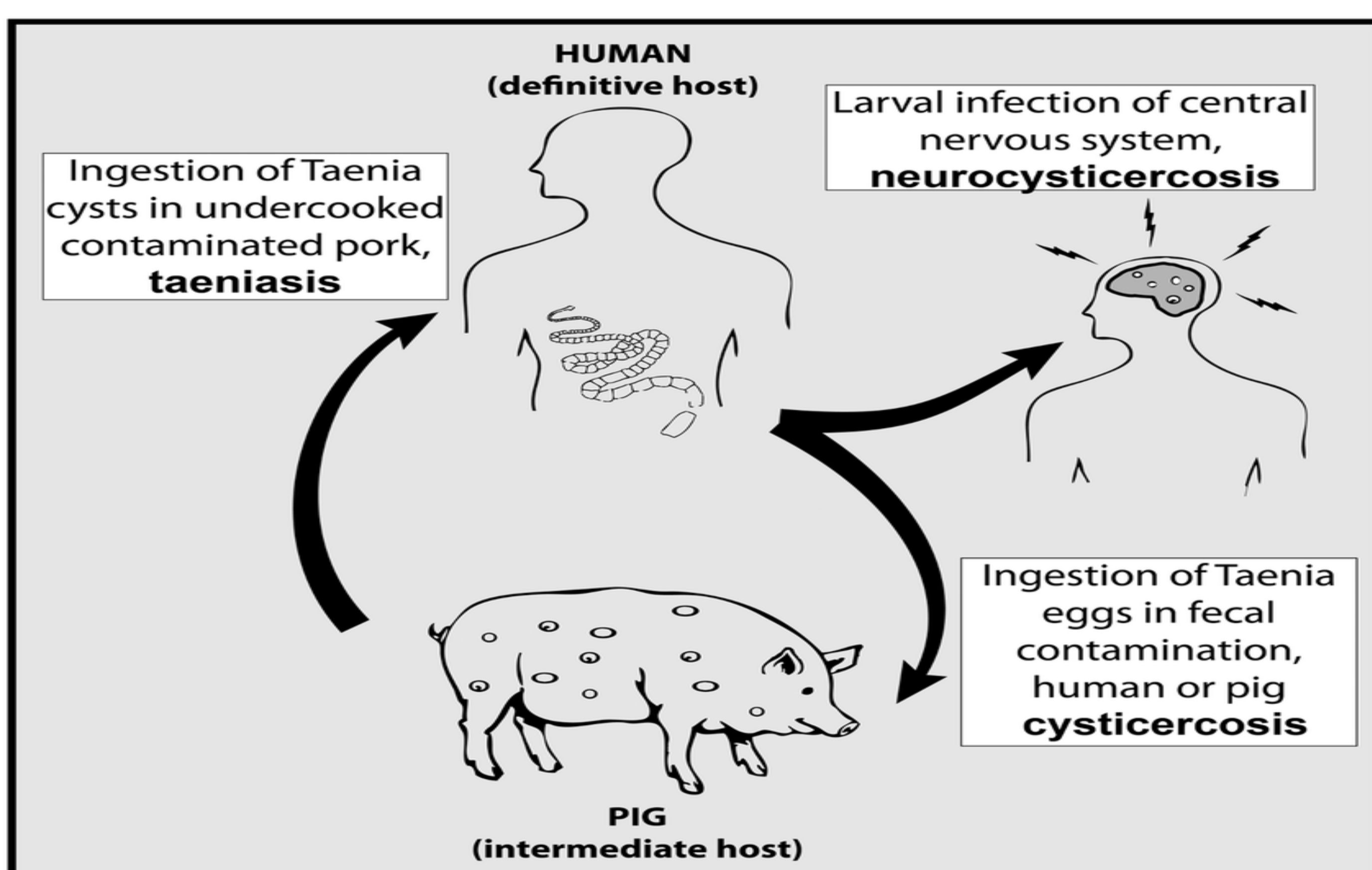
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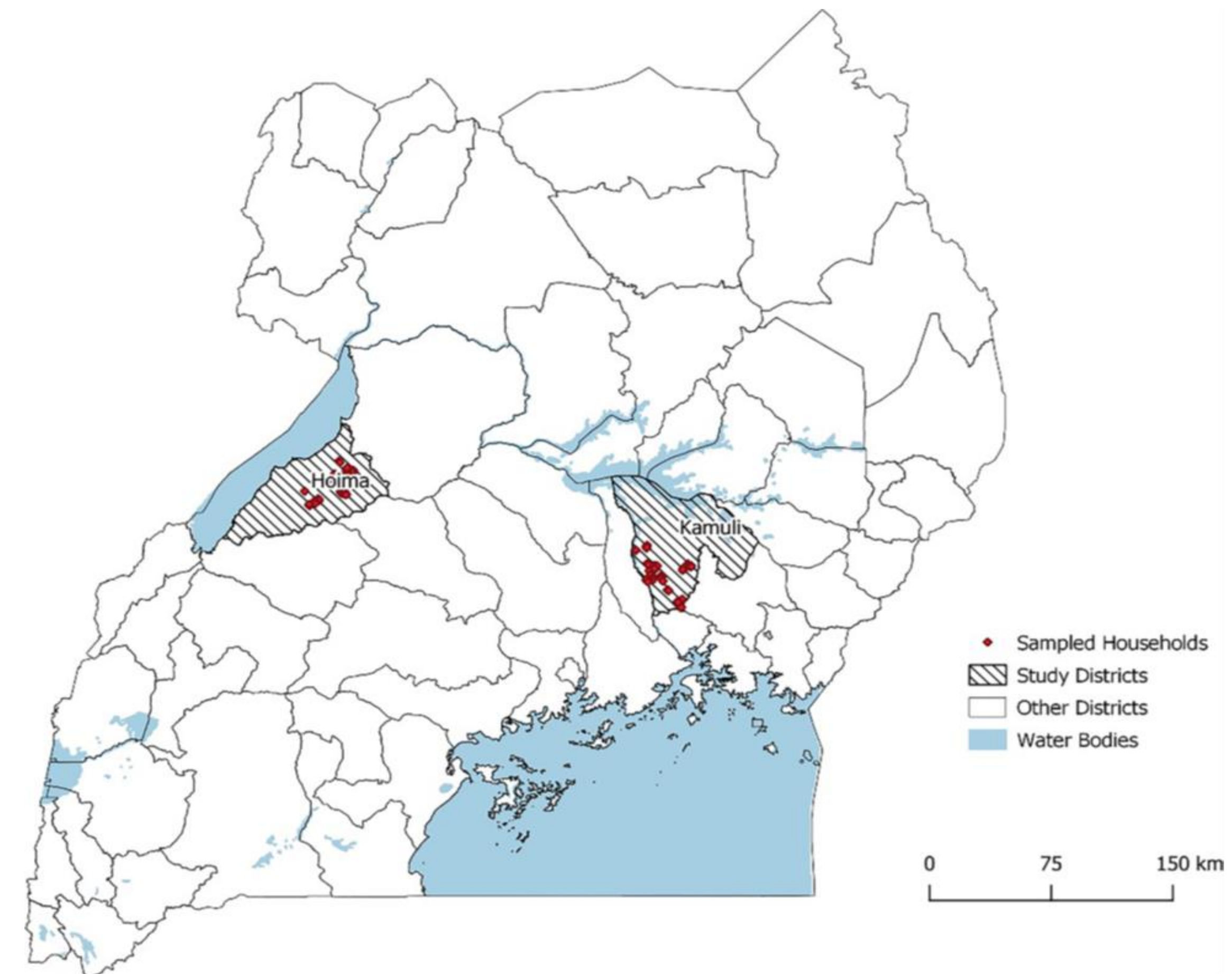
Introduction

Taenia solium, is a zoonotic helminth causing three diseases; taeniasis (in humans), neurocysticercosis (NCC, in humans) and porcine cysticercosis (PCC, in pigs). Understanding the co-infection status can support the integration of control of the parasites using Oxfendazole which kills both *T.solium* cysts and some of the GIT parasites in pigs.

T. Solium life cycle (Source: O'Neal et al., 2014).

Objective

To determine the *Taenia solium* porcine cysticercosis (PCC) and gastrointestinal (GI) parasites co-infection status in pigs.

Methodology

o   A cross-sectional study design.

o Household questionnaire + Sample metadata in ODK.

o Blood – serum extraction.

o Fecal sampling in pigs.

o Data collected between November and December 2019

o Ag- ELISA for PCC – Apdia commercial AgELISA.

o Modified McMaster slide technique for egg and oocytes identification and quantification.

o Lab work undertaken Central diagnostic laboratory – Makerere University.

o Causal diagram used to postulate relationships.

o Univariable and multivariable analysis in R using GLMM.

Study sites

Results

o   The apparent animal level and household level seroprevalence was 4.8% (95% CI 2.7 – 7.1) and 9.7% (95% CI 5.5 – 14.4) respectively, differed across the two districts (p = 0.017) but not with sex, age and breed of the animal (p > 0.05).

o   Prevalence of GIT parasites: strongyles 79.0% (95% CI 74.3–83.6), coccidia 73.3% (95% CI 68.3–78.6), *Trichuris* spp. 7.4% (95% CI 4.9–10.6), Strongyloides spp. 2.1% (95% CI 0.7–3.5) and *Ascaris* spp.,4.9% (95% CI 2.8–7.4).

o   The proportion of co-infection was 57.4%.

o   At multivariable level, knowledge that pigs get infected by eating dirty feed was a predictor for PCC seropositivity (P = 0.005).

Conclusion

o There was high likelihood of pigs being infected with both PCC and GI parasite.

o The high rate of co-infection presents an opportunity for integrated control using oxfendazole.

o Further studies are required to test the feasibility of use of oxfendazole.

o Article available at:

https://link.springer.com/article/10.1007/s00436-021-07380-9

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