Kitchen waste as pig feed sustains transmission of Taenia solium cysticercosis in Mbeya, Tanzania

Braae, Uffe Christian; Harrison, Wendy; Lekule, Faustin; Magnussen, Pascal; Johansen, Maria Vang

Publication date: 2015

Document version
Early version, also known as pre-print

Kitchen waste as pig feed sustains transmission of *Taenia solium* cysticercosis in Mbeya, Tanzania

Uffe Christian Braae 1, Wendy Harrison 2, Faustin Lekule 3, Pascal Magnussen 1, 4, and Maria Vang Johansen 1

1 Section for Parasitology and Aquatic Diseases, Department of Veterinary Disease Biology, Faculty of Health and Medical Sciences, University of Copenhagen, DK-1870 Frederiksberg, Denmark, 2 Faculty of Medicine, School of Public Health, Imperial College London, United Kingdom, 3 Faculty of Agriculture, Sokoine University of Agriculture, Morogoro, Tanzania, 4 Centre for Medical Parasitology, Faculty of Health of Medical Sciences University of Copenhagen, DK-1353 Copenhagen, Denmark.

**Background**

- Recent data have shown that confinement of pigs can be insufficient in preventing transmission of porcine cysticercosis, indicating that pigs might become infected while being confined [1].

**Hypothesis**

- Pigs are infected with porcine cysticercosis through environmental contamination while being confined.

**Aim**

- To identify risk factors associated with porcine cysticercosis using a case-control study design.

**Methods**

- Case-control study design consisting of questionnaire interviews and observational surveys, utilising known information on persistent or multiple infections of porcine cysticercosis in an endemic area of Tanzania [1].

- Households were allocated to either the case or control group based on at least two visits during a 14-month period.

- Cases had one or more cysticercosis positive pigs on at least two occasions whereas controls had none.

- Risk factors were identified by logistic regression analyses.

**Results**

- From 20 villages a total of 93 households participated - 43 cases and 50 controls.

- Potato peels were said to be given to pigs either raw or boiled by 46% of the farmers.

- Porcine cysticercosis could be associated with absence or a completely open latrine (p=0.035, OR 5.98, CI: 1.33 - 43.02) compared to an enclosed latrine and feeding potato peels to pigs (P=0.007, OR 3.45, CI: 1.43 - 8.79).

**Take home messages**

- Whether potato peels are contaminated with *Taenia* eggs before they reach the household or whether the contamination is from water or dirty hands during peeling, remains to be confirmed.

- This study suggests that detailed assessment of a number of areas of pig management is essential for designing effective control programmes.

**Acknowledgements**

The Bill and Melinda Gates Foundation and the SLIPP-project (Securing rural Livelihoods through Improved smallholder Pig Production in Mozambique and Tanzania) funded by the Danish International Development Agency (Danida), file no. 09-007LIFE.

**References**