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

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

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**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.

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**References**