

## Pork consumption habits and occurrence of trichinellosis and cysticercosis in communities of Southern Laos

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### Introduction

Parasitic pork borne diseases (PPBD) are of major public health importance globally. FAO/WHO recently listed the 'Top Ten' food-borne parasites of global concern, which included cysticercosis and trichinellosis, both expected to be endemic in Laos. While some study exists for Northern Laos updated information for Southern provinces is lacking. This study aimed to determine the prevalence of cysticercosis and trichinellosis in pigs and humans and related risk factors in communities of Champasak province, Laos.

### Material and Methods

Champasak, an emerging business hub in Southern Laos, was chosen purposively due to its high pig population, considerable cross-border trade with neighbouring countries and involvement in another project. Two-hundred and seventy pig samples were collected randomly from 14 villages across three districts. In addition 238 villagers present in the same villages were asked to provide blood samples. Pig owners and villagers were interviewed on PPBD knowledge and pork consumption behaviour. Survey tools included questionnaires including Likert scales and focus group discussions. *Trichinella spiralis* IgG ELISA, DETRIG0480 (pig serum) or BioFisher (human serum) and apDia Cysticercosis Antigen ELISA (humans serum) were used to confirm the presence of *Trichinella* and cysticercosis respectively. Due to high cross-reactivity with other *Taenia* spp. Cysticercosis ELISA was not performed for pig sera.

### Results

Out of 270 pig samples analysed 79 (29%) were tested positive for *Trichinella*. ELISA testing for cysticercosis in pigs wasn't performed due to high cross reactivity with other *Taenia* spp. Seroprevalence for *Trichinella* were higher in older pigs (> 1year). Results for *Trichinella* and cysticercosis in humans indicate a prevalence of 17% (40/238) and 3.4% (8/238) respectively. Positive serological responses for *Trichinella* were higher in males than females. Results also showed that the most

villagers are aware of health risks when consuming raw or undercooked pork but they continue to do so as they like certain dishes containing raw or undercooked pork e.g. fermented sausages. This finding shows that past public health campaigns may have increased awareness of villagers on PPBD but consumption behaviour remains often unchanged. Therefore socio-cultural aspects for behaviour and its change should be further explored. Policy level (national and provincial) and community feedback was provided through a previously established one-health multi-institutional platform. The platform consists of 6 ministries namely: Health, Agriculture, Tourism, Communication, Education and Defence.

### Discussion and Conclusion

While results of this study for trichinellosis and cysticercosis in humans were considerably lower than those reported for the neighbouring province of Savannakhet (Holt et al. 2016) both parasitic zoonoses still pose a considerable risk to villagers in the study area. As we also observed risky consumption habits of villagers it is crucial that public health campaign also cover socio-cultural aspects of communities to be more effective in the future. Follow up activities are planned for 2019 will focus on more in-depth diagnoses procedures for cysticercosis in pigs and may include dissection of carcasses in an attempt to get more reliable information on the presence of cysts in pigs. Furthermore the multi-institutional platform will be further engaged and linked to a recently established one health platform to facilitate dissemination of results to relevant stakeholders and informative materials to villagers.

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### Reference

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