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Occurrence of Trichinellosis in indigenous pigs of ethnic minorities in Hoa Binh Province, Vietnam

Fred Unger¹, Vu Thi Nga², Hung Nguyen-Viet¹, Sinh Dang-Xuan³, Anne Mayer-Scholl⁴, Diana Meemken⁵, Nguyen Lan Anh², Maximilian Baumann⁵, Pham Thi Ngoc²

¹ International Livestock Research Institute (ILRI), Vietnam,

² National Institute for Veterinary Research (NIVR), Vietnam

Health (HUPH), ³ Center for Public Health and Ecosystem

Research (CENPHER), Hanoi University of Public,

⁴Federal Institute for Risk Assessment, National Laboratory for

Trichinella, Germany, ⁵Freie Universitaet Berlin, Institute of

Food Safety and Food Hygiene, Section Meat Hygiene, Germany

Introduction

Production of indigenous breeds is an important livelihood activity for ethnic minorities in Vietnam, including Hoa Binh province with the *Tay* ethnic group accounting for the majority of pig raisers. Indigenous pigs in Hoa Binh have traditionally been kept under extensive management systems, including free rooming which may contribute to the occurrence of parasitic pork borne disease (PPBD) including Trichinellosis. Despite several studies of Trichinellosis among humans and pigs being documented (1 & 2) for Vietnam, no updated information is available on the present Trichinella sero-prevalence in indigenous pigs in Hoa Binh province, North Vietnam. The presented research aims to assess the occurrence of Trichinellosis in pigs and improve diagnostic capacity of butchers and lab staff on PPBD.

Material and Methods

Activities conducted since 2018 include a prevalence survey to assess the occurrence of Trichinellosis in pigs and villagers. The sampling and results in villagers is part of another paper presented at this conference. The study was conducted in Da Bac district which has the highest pig population among all districts of Hoa Binh province. 352 indigenous pigs from six selected communes were sampled along with data collection of pig raising, age, consumption habits and gender (Figure 1). The communes were selected purposively based on high proportion of ethnic minorities and free rooming pigs. Sample size was calculated regarding an expected prevalence of 5% in pigs. All serum samples were tested for Trichinella antibodies using excretory/secretory antigen Ag-ELISA. Training of laboratory staff and butchers on diagnoses of PPBD was organised to address existing capacity gaps.

Results

In total, 13.6 percent (48/352) of pigs originated from 131 farms across the 6 communities of Da Bac district were serological positive for Trichinella. Pigs older than 6 months of age were more likely to be seropositive than pigs less or equal 6 months, with 19% (29/152) and 9.5% (19/200), respectively (OR = 2.24; 95% CI: 1.20 - 4.18; P = 0.011). Questionnaires concluded a very low knowledge of pig producers on PPBD with less than 2% having any knowledge. Risky consumption habits e.g. consumption of raw fermented pork were common in males and often related to village ceremonies. Capacity building efforts resulted in trained laboratory staff (6), veterinarians, public health officers and butchers (24) on diagnostic procedures for PPBD and/or hands-on meat inspection procedures. An observed challenge was the lack of feasible guidelines for meat inspection. It was noticed that the reporting system on slaughter check findings has limitations. Pigs in remote areas are mainly slaughter in home slaughter by “mobile” butchers without adequate meat inspection.

Discussion and Conclusions

The study provides first data on Trichinella sero-prevalence in indigenous pigs from ethnic minorities in Hoa Binh. Observed prevalence in pigs aligned with poor knowledge on PPBD and observed risky consumption habits may pose a considerable risk to consumers. More sensitive monitoring systems and further awareness raising is needed. The roaming/semi-free roaming keeping systems indicate that the hygienic conditions of pig management is poor and can be a risk factors for the circulation of parasitic disease in indigenous pigs. The farmers must be encouraged to adopt adequate livestock-management practices. In addition, continued surveillance of Trichinella infection, including reinforcement of meat inspection is recommended. To address the lack of meat inspection in the study area the introduction of a pilot cell-phone based information system to record abnormal observations by butchers is currently explored. Apart from this simplified guidelines for meat inspection are planned to be introduced.

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Figure 1: Sampled communes in Da Bac district of Hoa Binh province

References

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