

# A survey to investigate Leptospirosis transmission in pig farming households



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## Introduction

In Vietnam, leptospirosis was first reported in 1930. The Mekong delta areas often present suitable condition for survival and transmission of *Leptospira* spp, such as regular flooding, presence of several animal species that may maintain the *Leptospira* cycle, suitable climate for survival of the bacteria in the environment and socio-economic condition that may favor transmission. Leptospirosis is rarely diagnosed among animals in Vietnam due to limited laboratory facilities. To get more information about the actual Leptospirosis situation in the pig population, blood samples were collected from pigs at slaughterhouses in targeted districts of Binh Phuoc, representative for the high lands and Tien Giang, for low lands in the Mekong delta, respectively. This was aligned with investigations in people at risk in the same areas including household members of slaughtered pigs origin.

## Materials and methods

Five pig slaughterhouses in the two areas were selected for the study. Blood samples were collected from 1005 pigs randomly selected among the batches present for slaughter during visits. Information was also collected concerning the abattoir management and its workers. Sampled pigs were traced back to the households of origin and identified household were asked to participate in the survey. At household level information on farm and hygienic practices was collected by questionnaires (n=202) and from one up to three healthy household members blood samples were taken (n=420). Blood samples from animals and humans were tested for the presence of antibodies against 18 different sero-groups of leptospirosis. Data analysis were performed using Epi-Info 6.0 software. *T*-test and the  $\chi^2$  test were used for quantitative and qualitative variables.

## Results & Discussion

Overall 25.3% of pigs and 14.8% of humans carried antibodies against *Leptospira* spp. Differences between provinces were observed with 29.0% for pigs in Tien Giang (high lands) and 22% in Binh Phuoc (low lands/Mekong delta) respectively. Among the 202 recruited households, 22 (10.9%) had both leptospirosis positive pigs and humans. Six sero-groups were found in Tien Giang, with the most prevalent *L. semaranga patoc* (55.5%) and *L. pyrogenes pyrogenes* (23.4%). In Binh Phuoc, seven sero-groups were documented, in which the 03 sero-group *L. Semaranga patoc* (93.2%) was most prominent.

## Conclusions

Results indicate the importance and need of epidemiological investigations to collect base line information on the circulation of *Leptospira* in human and pigs in Vietnam. Observed sero-prevalence varied between low land and high land areas with significant higher values in the latter. Most prominent sero-groups were *L. semaranga patoc*, *L. pyrogenes pyrogenes* and *L. Semaranga patoc*, depending on area. Results also demonstrate the potential risk for human and the need for building up or strengthen existing collaborative mechanism between animal and human health authorities at various levels. Special emphasises should be given to local communities enhancing public awareness on leptospirosis including other zoonoses.



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