

Seropositivity against flaviviruses among pigs in Hanoi

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Introduction

Pigs are among the most commonly kept livestock in Vietnam, and in Hanoi city alone there were estimates that about 1.6 million pigs in 2017. While pig production is important for food security and livelihoods, they can contribute to increased risks of transmission of zoonotic infections. Japanese encephalitis virus (JEV) is a mosquito-borne virus causing serious disease in humans, and pigs are considered an amplifying host. A serological survey of pigs in four peri-urban districts of Hanoi was conducted to understand the association between presence of arthropod-borne viruses and the livestock keeping in Hanoi.

Methods

- From September to November 2018, blood samples were collected from 704 pigs in 190 small-scale farms in the districts of Bac Tu Liem, Chuong My, Dan Phuong and Ha Dong of Hanoi city.
- The pig sera were submitted to NIVR and tested for antibodies against West Nile Virus by c-ELISA, since this ELISA cross-reacts with all flaviviruses.

Preliminary results by c-ELISA

Table 1. Overall result of testing

Test result	Number of samples	%
Positive	607	86
Negative	75	11
Doubt	22	3
Total	704	100

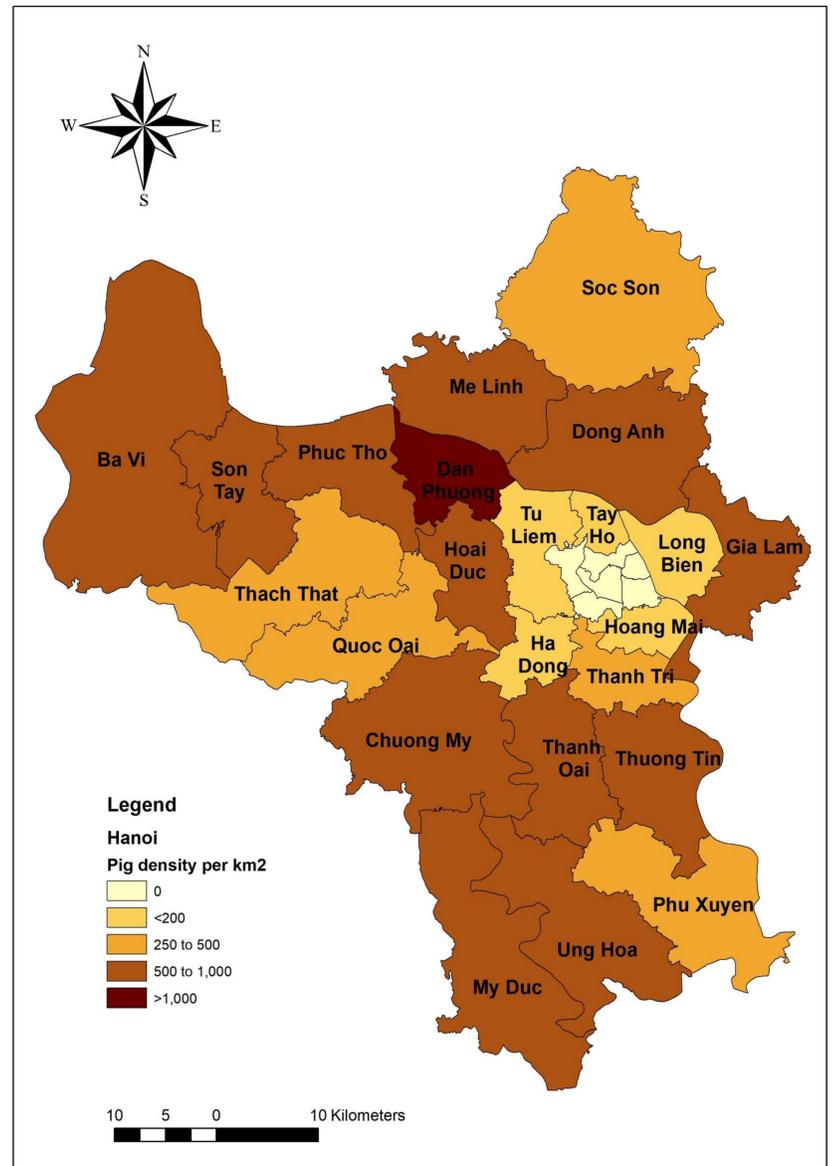


Table 2. Result in the districts

District	Number of pig farms tested	Number of pig farms positive	%
Bac Tu Liem	54	53	98
Chuong My	53	53	100
Dan Phuong	49	39	80
Ha Dong	34	32	94
Total	190	177	93

Conclusion

High seroprevalence in pig population in Hanoi peri-urban area indicates Flavivirus was widely circulating in the city, and the most likely virus to infect pigs is JEV. This implies that pig production in Hanoi could contribute to increasing the risk for infections in humans, therefore intervention for vectors in Hanoi city to mitigate the risk of diseases is strongly recommended.

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