Epidemiology of infection / control and mitigation option of foodborne pathogens and zoonotic diseases in the pork production chain.

25. Serological and molecular investigation for brucellosis in swine in selected districts of Uganda

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Brucellosis is a notifiable zoonotic disease affecting livestock, humans and wildlife in Uganda. Human brucellosis cases are frequently reported and the increasing incidence is suggestive of increasing disease in the livestock population. Pigs are among the livestock species that can be infected with human pathogenic Brucella suis biovars 1 and 3 and can be a significant source of brucellosis for humans. Uganda has a rapidly growing pig population and the pork consumption per capita is the highest in East Africa. The objective of this work was to determine the seroprevalence of brucellosis in Ugandan pigs. A cross-sectional study was conducted in farms in 3 of the major pig-keeping districts in Uganda (Masaka (n=381), Mukono (n=398) and Kamuli (n=414)). In addition, pigs originating from these districts were sampled in the major pig abattoir in Kampala (n=472). In total, 1,665 serum samples were investigated by serological and molecular tests. Only 3 putative brucellosis positive samples were detected serologically using indirect ELISA. These sera were found negative for Brucella antibodies by CFT, however, 2 of them had antibodies against Yersinia enterocolitica as determined by SAT. Presence of antibodies against Yersiniae was confirmed by Y. enterocolitica antibody specific ELISA. The 2 ELISA positive samples were brucellosis negative using real time PCR. We tested an additional 142 sera from the 1,665 samples with real time PCR. All tested negative. Based on our findings, pigs in the main pig-keeping districts in Uganda appear to be free from brucellosis and thus the risk of acquiring brucellosis from them or their products seems to be very low. However, pigs may harbor the zoonotic Y. enterocolitica. This is the first study to investigate the occurrence of brucellosis in pigs in Uganda and the first study to report Y. enterocolitica antibodies in swine in Uganda.

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