

Comparison of African swine fever virus prevalence and risk in two contrasting pig-farming systems in South-west and Central Kenya

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Abstract

We describe a horizontal survey of African swine fever virus (ASFV) prevalence and risk factors associated with virus infection in domestic pigs in two contrasting production systems in Kenya. A free range/tethering, low input production system in Ndhiwa District of Southwestern Kenya is compared with a medium input stall fed production system in Kiambu District of Central Kenya. Analysis of variance (ANOVA) of data derived from cluster analysis showed that number of animals, number of breeding sows and number of weaner pigs were a significant factor in classifying farms in Nthiwa and Kiambu. Analysis of blood and serum samples using a PCR assay demonstrated an average animal level positivity to ASFV of 28% in two independent samplings in South-western Kenya and 0% PCR positivity in Central Kenya. No animals were sero-positive in either study site using the OIE indirect-ELISA and none of the animals sampled exhibited clinical symptoms of ASF. The farms that contained ASFV positive pigs in Ndhiwa District were located in divisions bordering the Ruma National Park from which bushpig (*Potamochoerus larvatus*) incursions into farms had been reported. ASFV prevalence ($P < 0.05$) was significantly higher at distances between 6 and 16 km from the National Park than at distances closer or further away. One of the 8 bushpigs sampled from the park, from which tissues were obtained was PCR positive for ASFV. The data therefore indicated a potential role for the bushpig in virus transmission in Southwestern Kenya, but there was no evidence of a direct sylvatic virus transmission cycle in Central Kenya. ASF control strategies implemented in these areas will need to take these epidemiological findings into consideration.