

Husbandry practices and trade networks between subsistence pig farmers: A potential risk for African swine fever transmission in Northern Kwa Zulu Natal, South Africa.

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April 10, 2022

Abstract

Animal husbandry practices and livestock movements are some of the main factors that increase the risk of disease introduction and spread. This knowledge is particularly relevant in transboundary areas to anticipate and prevent the introduction of transboundary animal diseases. In South Africa, the management of some notifiable livestock diseases is based on the establishment of disease control zones in line with the recommendations of the World Animal Health Organization (OIE). Movement between these zones is controlled by local, provincial, and national veterinary authorities. Because disease occurrence and spread is a dynamic process, it is important to ensure that infected livestock are not exported from areas delineated as disease protection or control zones. In this study, 254 pig farmers were interviewed to gather information on the local socio-economic importance of pig farming, the pig husbandry methods employed and the movement of pigs within and outside the African swine fever (ASF) control zone from Northern Kwa Zulu Natal. In addition, blood samples taken from 174 domestic pig of those farms were tested for ASF antibodies. Social network analysis of data collected showed an extensive trade network without the involvement of intermediaries and sporadic exchanges with neighbouring communities, including some located in Mozambique and Eswatini. The maximum distance travelled for selling pigs was 495 km. Husbandry methods (free ranging pigs, throwing away carcass offal and slaughtering remains at homesteads) implemented by the farmers, predominantly single women, increased the risks of disease introduction and transmission. Considering the importance of subsistence pig farming in the study area, especially to women, and despite the absence of ASF antibodies in sampled pigs, it is highly relevant to educate the community and raise awareness on the risk implications of uncontrolled trade in pigs and poor husbandry practices in transboundary disease introduction and transmission.

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