Development of improved control methods for African Swine Fever

Costard, S.[1], Pfeiffer, D.U.[1], Jori, F.[2], Chevalier, V.[2], Vial, L.[2], Porphyre, V.[2], Duteurtre, G.[2], Rakotondrahanta, S.[3], Vidon, H.[3], Ravaomanana, J.[4], Ndiaye, R.K.[5], Roger, F.[2]

[1]The Royal Veterinary College, United Kingdom
[2]Agricultural Research Centre for International Development, France
[3]Malagasy Professionals of Small Stock Farming, Madagascar
[4]National Centre for Applied Research on Rural Development, Madagascar
[5]Inter-States School of Sciences and Veterinary Medicine, Senegal

Abstract

The present study aims at development of improved methods for control of African Swine Fever (ASF) in different epidemiological situations, based on a risk analysis framework. Study areas were selected in Senegal and Madagascar, where the disease is thought to involve domestic pigs, and potentially wild swine and/or ticks.

Based on literature information and expert opinion, a generic epidemiological model was developed, describing the possible risk pathways related to the introduction of ASF into pig farms. The findings from the modelling process were used to identify key pieces of information required to generate meaningful risk assessments. This data was collected using field studies of pig production and bushmeat trade in the study areas. Questionnaire surveys and investigations focused on local husbandry methods, animal movements and meat processing. Studies on the possible interactions between pigs, ticks and/or wild swine were implemented. Biological sampling of live animals and carcasses was carried out to estimate the prevalence of ASF. Multivariable statistical analysis methods were used to quantify the importance of risk factors.

The results were used to refine the generic model and adapt it to each epidemiological situation, considering common husbandry methods and sanitary measures related to pork meat production. Risk management strategies were developed based on model predictions.