

Epidemiological Studies of African Swine Fever in Madagascar

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Context

African Swine Fever (ASF) has been introduced to Madagascar in 1998 and resulted in severe losses and the collapse of the pig industry. The disease is now endemic in most parts of the country and regular outbreaks constrain the pig production.

Various ecosystems with specific wildlife are present in Madagascar, a fact which is likely to influence the role of the sylvatic cycle in the epidemiology of ASF. As a result, this country provides a unique opportunity to study key aspects of the ASF epidemiology.

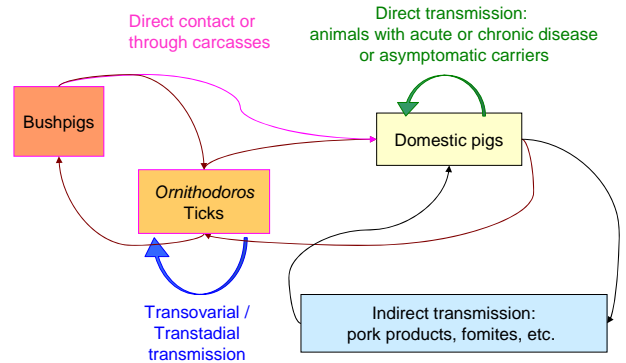
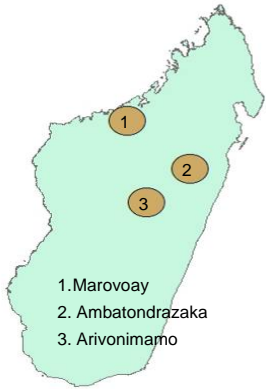


Figure 2: Potential transmission pathways of ASF in Madagascar

General Objectives of the project

Better understanding of the epidemiology of ASF in Madagascar

- Most important factors influencing the spread of infection between domestic pigs
- Roles of and interactions between wildlife reservoirs and domestic pigs for maintenance and transmission of the ASF virus

Development of tools to inform the development of control measures

Specific Objectives & Methods

1) Epidemiological studies of pig production

To understand the dynamics of the pig production system, and to assess the between-herd transmission of ASF

- Baseline study of actors and flows using a questionnaire survey (on-going)
- Prevalence study based on biological sampling in abattoirs and at strategic stages of the production chain (2006)
- Questionnaire-based case-control study to identify risk factors (2006/2007)

2) Epidemiological studies on wildlife

To understand the role of wild reservoirs in the transmission of the disease

- Biological sampling of bushpigs to evaluate ASFV circulation in wild swine populations (2006)
- Collection of ticks in the field to assess tick distribution and ASFV circulation in this host (2006)
- Serological testing of domestic/wild pigs to investigate contacts with ticks (2006)

3) Molecular epidemiology

To further investigate the interactions between hosts

- Assessment of genetic variability of ASF virus isolated from different hosts



Figure 3: Possible actors and flows involved in the transmission of ASF

Expected Outputs

For each study area: Prevalence of ASF, risk factors for ASF, information on the structure of the pig production system.

Model of the between-farm transmission of the disease (see corresponding poster).

Risk assessment for the introduction of ASF to pig farms and risk mapping for the sylvatic cycle.

Simulation of the impact of control strategies using different scenarios.

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