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RISK ASSESSMENT OF THE RE-EMERGENCE OF AFRICAN SWINE FEVER IN MAURITIUS.

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Introduction

Outbreaks of African Swine Fever (ASF) always have catastrophic consequences in a naïve environment, particularly in an insular locations, where stamping out all the pigs is often deemed necessary for eradication of the disease such as the case of Hispaniola in the beginning of the 80's (1). The first cases of pig mortality in Mauritius were detected in Roche Bois, close to Port Louis, in June 2007. ASF was officially confirmed in October 2007. Stamping out, biosecurity measures and movement control of pigs and pig products and closure of the abattoir were implemented (2). Stamping out was continued until March 2008; more than 10,000 pigs were slaughtered. The last outbreak was reported in July 2008 in Olivia. Assessment of the risk of re-emergence is essential to avoid another such socio-economic disaster. This assessment is also needed to fulfil the requirements of the OIE guidelines in order for Mauritius to recover its status of freedom from the disease.

Materials and methods

A first survey in November 2009 permitted the compilation of data from veterinary services, harbour and airport authorities as well as from the NPPPO which is responsible for inspection and confiscation of prohibited plant and animal material. During this period field visits to evaluate farming practices were undertaken. Following stratified sampling, analyses of 603 pigs' sera for ASFV antibodies were performed using a commercial ELISA (Ingenasa). All animals tested were older than 4 months and younger than 1.5 years old to avoid any cross reaction with colostral antibodies or historical reaction. Sera of 336 domestic pigs and 12 feral pigs were analysed for presence of anti-soft tick antibodies to assess the likelihood of an existing sylvatic cycle.

Collection of data about movement in the harbour and airport as well as information about feeding habits on pig farms was completed in June 2010.

After the construction of the event model for the release and the exposure, a semi quantitative risk assessment based on the recommendation of AFSSA (3) was made.

Results

All animals tested for ASF antibodies were sero-negative. The prevalence of positive sera for anti-tick antibodies was 0.5% for *Ornithodoros erraticus* (only 2 positives) and 2.0% for *O. moubata* (7 positives in total).

The highest probability of re-introduction of the virus was found to be through the introduction of infected pig products. The particular risk presented by passengers either at the harbour or at the airport is the most important. Due to the

number of passengers per year the airport is probably the most sensitive place to consider.

The probability of exposure through contaminated animal products, should the virus be introduced into the island, seems high considering the individual pig farms.

Discussion

The positive reactions for anti-tick antibodies are probably due to unspecific reactions to bites from other ectoparasites. Therefore it seems that no sylvatic cycle could occur in Mauritius. Re-emergence of ASF could only be due to re-introduction of the virus.

To control the risk passengers represent at the airport and the harbour, the use of specifically trained dogs is advised. If there is any relationship between individual pig farms and areas with high concentrations of pig farms, the spread of the disease could be dramatic. To reduce this risk, it was advised to increase the level of security at the farm level.

Acknowledgements

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References

1. Arias and Sanchez-Vizcaino (2002) 4.3, 133-139
2. Lubisi et al (2008) TBED 56, 178-188
3. AFSSA (2008) 47p.

¹ National Plant Protection Office