EPIDEMIOLOGICAL STUDIES ON SYLVATIC CYCLE OF AFRICAN SWINE FEVER IN SENEGAL

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Introduction

African swine fever is one of the most important obstacle for the development of swine production in Africa. The sylvatic cycle has been extensively described in East and Southern Africa as involving warthogs and soft ticks (Plowright & al., 1994). However, the existence of this cycle has never been demonstrated in Central or West Africa. In Senegal, *Ornithodoros moubata* is inexistent but another soft tick specie (*O.sonraï*) is present and may play a part in the epidemiology of the disease (Vial & al.).

The Sine Saloum region (Central West Senegal) where ASF outbreaks occur regularly, holds simultaneously domestic pigs, warthogs and *O. sonraï*. In this study, the existence of a sylvatic cycle was investigated by seeking for soft ticks in pig-farms and warthog burrows and by collecting warthog samples.

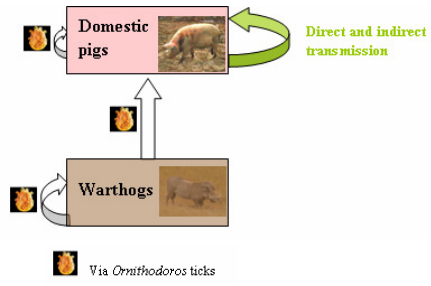

Figure 1: The maintenance of ASF virus in East and Southern Africa

Material & Methods

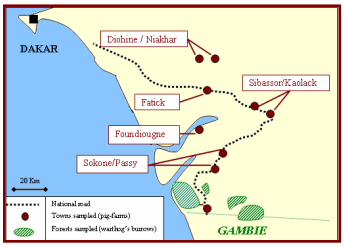

Figure 2: Study areas in Senegal

In the Sine Saloum region, 6 sites were determined for ticks sampling in pig-farms and 4 areas for seeking in warthog burrows. We collected ticks by introducing a flexible tube into the animal burrows or cracks of pigsties, and sucking out their contents with a portable petrol-powered aspirator. Sampled ticks were analysed by PCR amplification of VP72 gene B646L (Basto & al., 2006). In addition, warthogs samples (Serum, paper filter and organs) were collected from hunting camps and analysed by Ingenasa Elisa test and PCR (Basto & al., 2006).

Figure 3 : Warthog burrow

Results

Site	Total farms	Inspected farms	Ticks within farm	Ticks within building
Karang	20	5	0	0
Sokone/ Passy	39	21	8	0
Foundiougne	35	18	4	0
Fatick	30	11	7	2
Kaolack/Sibassor	65	19	13	2
Diohine/ Niakhar	55	27	13	0
TOTAL	244	101	44	4

Figure 4 : results for ticks sampling in pig-farms

Among 101 pig-farms inspected, *O. sonraï* was found in 44 farms. In 95% of cases, soft ticks were found inside rodent burrows situated close (25% at less than 10 m) to pig-pens. Preliminary analysis of tick samples allowed the detection of ASFV DNA in three of them by PCR. A large sample of more than a 1000 ticks still has to be analysed to assess prevalence infection.

In bush samples, no tick was found within warthog burrows (n=48).

Six warthogs were sampled and will be analysed soon as well as others samples from others areas in Senegal. More samples are expected in the next hunting campaign.

Discussion

According to these early results, it seems that the epidemiologic diagram of Senegal does not fit the classical model of transmission warthogs-ticks-domestic pig which has been described in East and Southern Africa (Plowright & al., 1994). The role of this tick appears less important in the epidemiology of ASF than the one described for *O. moubata.* However, it seems that occasional contacts may occur between *O. sonrai* found in rodent burrows and domestic pigs. If the tick doesn't play a part in spread of ASF between pig herds, it could be a source of virus for susceptible pigs in disease free farms. Experimental infections are necessary to confirm that *O. sonrai* could be a natural reservoir and vector of the disease.

Figure 5: Traditional pig-pen

Direct transmission from wild to domestic pigs seems unlikely since warthogs are scarce in the region due to over hunting. However, the role of warthogs still needs to be more deeply studied in Senegal and other West African countries.

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