

The first report of *Haematopinus suis* on wild boars in Brazil

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Abstract: The expansion of wild boar (*Sus scrofa*) and its hybrids with domestic pigs is high in many parts of the world, including South America. These exotic animals have caused great economic losses in agriculture, sheep breeding and environment. Also, they can transmit various pathogens to domestic animals and humans. Two copies, one piglet and an adult female, were captured in different regions in southern Brazil. Macroscopic examination showed high lice infestation in piglet and less in the female. The lice were collected, counted and kept in alcohol 70°. Separation of males, females and nymphs was performed under stereomicroscopy. Permanent mounts were made between slide and coverslip to conduct identification. A total of 20 females, 33 males and 225 nymphs distributed throughout the body of animals were found. Microscopic examination of the slides confirmed the presence of *Haematopinus suis* infestation with typical morphological characteristics in both cases. This is the first record of this ectoparasite in wild boar in Brazil.

Keywords: Anoplura, Artiodactyla, Suidae, *Sus scrofa*, ectoparasites, lice, wild boar

INTRODUCTION:

The wild boar (*S. scrofa*) (Artiodactyla, Suidae) is a species native to Asia and Europe, which was brought to American continent by the man in the Portuguese and Spanish vessels and by sport hunters. On this continent found abundant food, since they are omnivores: eat plants, insects, rodents, frogs, small mammals and birds puppies. Moreover, they found no natural predators. The diversity of their food habits associated with absence of natural predators facilitated its spread across the continent, making its control more difficult. While most wildlife populations have been significantly reduced by human action, coming to extinction, the wild boars population increases worldwide. Under favorable conditions, the population may increase to five times a year. Each female usually has two cubs per year, with up to eight puppies each [1].

This exotic species entered Brazil through the southern region, bordering Argentina and Uruguay, and currently is spread throughout the territory. They invaded farms where domestic swine are created. The cross between the two species generated fertile individuals, known as “javaporcos”, which are larger, more aggressive and more reproductive potential, exacerbating the economic and environmental situation. It has become a problem in many regions, causing losses to agriculture, livestock and environment [2]. Also can be reservoirs and vectors of pathogens for domestic animals and man. The consumption of their

meat can transmit *Toxoplasma gondii* and *Trichinella spiralis* to humans [3]. Because of these parasitic diseases, European health agencies conduct campaigns warning: "The boar can kill even after death". Several studies have reported the infection of wild boars, and the consequent possibility of transmission to domestic species of viruses (foot and mouth disease, rabies, Aujeszky, influenza), bacterial diseases (brucellosis, leptospirosis) and parasitic infections caused by *Metastrongylus sp.*, *Ascaris suum*, *Trichuris suis*, *Strongyloides sp.*, *Trichostrongylus colubriformis*, *Oesophagostomum dentatum*, *Trichinella spiralis*. Protozoal infections such as *Balantidium coli*, *Entamoeba spp.*, *Giardia lamblia*, *Eimeria sp.*, *Toxoplasma gondii*, *Trypanosoma cruzi* and *T. evansi* are also described in the literature [4, 5, 6].

The presence of wild boar and their hybrids (“javaporcos”), in addition to economic losses, health risk and environmental destruction, may represent a direct risk to human life. There are reports of farmers and hunters killed by wild boars in the interior of São Paulo and Minas Gerais (Brazil), as well as several cases in Europe.

There is little information on the occurrence of ectoparasites in wild boars in Latin America. The few reports are restricted to ticks; with only quote the presence of lice without identification. This may be due to later examination of slaughtered animals, with enough time for these ectoparasites leave the host.

It has been reported infestation of the host by blood-sucking louse *Haematopinus suis* (*H. suis*) in Europe, Asia, Africa, Oceania and North America. In the United States they have been reported in Tennessee [7] and in Kansas [8]. This parasitism has also been described in Austria [9], Australia [10] and in Turkey [11]. According to Durden & Musser [12] anywhere in the world where there are domestic and wild pigs, this louse will be found. However, it is more prevalent in temperate regions [13].

H. suis is the only louse that parasitize the swine. It is the largest louse Anoplura suborder, measuring 5 to 6 mm in length. The head typically has twice the length. It has a large sternal plate, wider than long. The paratergal plates are developed, growing, and form a dark stripe on the side of insect abdomen [13]. Males are smaller than females.

The contagion is direct, through the approximation of animals during feeding or resting (female, young and puppies), and during mating, since males are solitary animals. The mating with domestic pigs can lead to a cross-infestation of domestic and wild animals, with the risk of transmission of diseases caused by various pathogens through this louse.

A larger research project was approved by the Ethics Committee of the Federal University of Pelotas - UFPel (2297/2013), with release of wild boar hunting for research (ICMBIO- 28810-1). The study has been developed in this laboratory, and aims to identify pathogens present in these animals that can put human life and domestic animals at risk.

This study aims to report the occurrence of ectoparasitism by *H. suis* in wild boars captured in southern Brazil. Two animals slaughtered, were brought to the Parasitology Laboratory of this University. The first, a young boar with about three months old, was captured in Piratini - RS (31° 26' 32" S; 53° 6' 16" W); the second, an adult female, was captured in the town of Cerrito - RS (31° 51' 6" S; 52° 48' 38" W). The lice were collected and kept in alcohol 70o for later identification.

Slides were assembled according Huber and Reis [14] and used the identification key [15], taking into account morphological features such as the shape of the chest plate of males and females, developed pleural plaques and protruding laterally, under light microscopy.

In the puppy were found 24 male, 9 female and 222 nymphs. In the female these numbers were 9, 11 and 3 respectively; totaling 278 lice. A total of 20 females, 33 males and 225 nymphs distributed throughout the body of animals were found. The greater intensity of parasitism was detected in young animals.

This is the first record of parasitism by *Haematopinus suis* in wild boar (*Sus scrofa*) in Brazil.

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