The **Reference** in **Prevention** for **Animal Health**

DETECTION OF *BORDETELLA BRONCHISEPTICA* AND *PASTEURELLA MULTOCIDA* THROUGH ORAL FLUID IN GROWING PIGS IN THE PERIOD OF 2014 TO 2019 IN BRAZIL

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INTRODUCTION

Bordetella bronchiseptica (Bb) is the primary agent of Non-Progressive Atrophic Rhinitis (AR), major respiratory disease that attacks nursery pigs throughout the world. This bacterium sticks to the nasal mucous membrane and produces a dermonecrotic toxin capable of causing partial loss of bones in the nasal concha, associated with facial distortion and nasal hemorrhage[1]. These lesions predispose the animals to other infections, mainly by *Pasteurella multocida* type D (Pm), which aggravates the lesions in the nasal concha leading to Progressive Atrophic Rhinitis (PAR), but also by *Haemophilus parasuis, Streptococcus suis* and even *Actinobacillus pleuropneumoniae*[2]. The main form of transmission of the disease is from the sows to their newborn pigs, via nasal contact and further during lactation. The infected piglets could transmit the disease to other pigs in the nursery after weaning[2]. Thus, the losses associated to AR induce a low feeding efficiency and an increase in time for pigs to reach the slaughter weight in relation to healthy animals[3]. The purpose of this study was to evaluate the prevalence of Bb and Pm found in samples of oral fluid (OF) collected from 2014 to 2019, in Brazil.

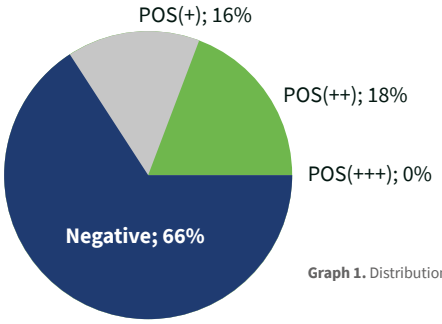
MATERIALS AND METHODS

In the period from January 2014 to October 2019, 559 samples of OF were collected from growing pigs from farms in different regions of Brazil. The samples were inoculated in FTA ELUTE cards (Whatman Inc., Florham Park, NJ), sent to DIAGNOS laboratory, (Hipra Saúde Animal) and analyzed with quantitative-PCR the presence of Bb and Pm; toxigenic strains of Bb and the toxin of Pm.

RESULTS

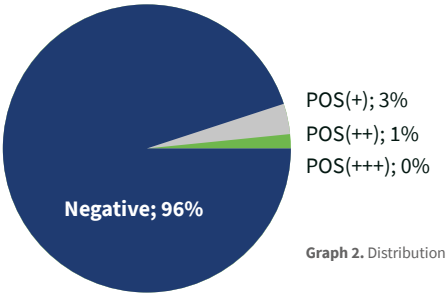
Results are indicated in crosses, the low concentration of DNA is represented by 1 cross (+), concentration mediated in 2 crosses (++) and high concentration in 3 crosses (+++). Among the 559 samples analyzed, 191 (34%) were positive for Bb and 25 (4%) positive for Pm. Distribution of results is represented in graphs 1 and 2, respectively.

Bordetella bronchiseptica



Graph 1. Distribution of positiveness for Bb.

Pasteurella multocida



Graph 2. Distribution of positiveness for Pm.

CONCLUSIONS AND DISCUSSION

These results indicate the presence of pathogenic strains of Bb in high concentration and low prevalence of Pm in growing pigs in different farms in Brazil. The early detection of these agents can be a favorable strategy in the control of Atrophic Rhinitis before the animals arrive to the slaughterhouse. As other studies suggested, prevention of Atrophic Rhinitis relies on the correct immunization of the sows and the infection pressure control in the environment.

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