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Happy Pigs -
Healthy People

PROCEEDINGS

Investigation of pseudorabies virus infection in Brazilian feral swine populations

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Introduction

Pseudorabies or Aujeszky´s disease is a herpesvirus infection, caused by the pseudorabies virus (PRV), primarily in swine and present in Brazil since 1912. Santa Catarina State (SC) is the major pork producing State in Brazil and was the first one to implement an eradication program in 2001. The program, funded by a joined effort of industry and swine producers association was successful in gradually eliminates PRV from swine herds in SC. By the year 2004, almost 1000 herds were sanitized and PRV was eradicated (1). However, as in other pork producing countries which PRV was eradicated, wild boars or feral pigs are considered an epidemiological risk for reemergence of PRV infection (2). Populations of feral pigs are present in 11 Brazilian states where they are considered invasive species (3). In the Pantanal wetland in Mato Grosso do Sul State (MS), feral pigs are considered an established animal population where is estimated the existence of about 9.800 groups of animals (4). The objective of this work was to establish a diagnostic methodology for PRV in feral pigs from Pantanal region.

Material and Methods

A total of 148 feral pigs were captured in five farms in the sub-regions of Nhecolândia and Abobral, in the Pantanal of MS. Sample collection was done in two periods, from August to September 2009 (P176/09) and from January to August 2010 (P25/11). Pigs were captured individually and besides measurements to analyze their population ecology such as weight, age, health condition, among others; nasal, vaginal and / or preputial swabs and blood were collected. Swab samples were inoculated in SK6 (swine kidney) cells for virus isolation or submitted to viral DNA extraction by MagMAX® 1836-5 (Applied Biosystems). Real-time PCR assays for the detection of PRV *gB* gene (glycoprotein B) were conducted using TaqMan chemistry (5). Screening ELISA and serum neutralization (SN) tests in sera samples were done at CEDISA (Center of Diagnosis of Animal Health), in Concordia, SC.

Results and Discussion

Serology assays reveled specific PRV antibodies to PRV in 31/38 (P176/09) and 91/110 sera (P25/11), indicating a frequency of 82.4% positives. However, all samples resulted negative by tissue culture viral isolation, suggesting absence of infectious viral particles. Same results were obtained using real-time PCR assays where all tested samples of nasal, vaginal and / or preputial swabs from 148 pigs were negative. These results confirm the presence of PRV antibodies in populations of feral pigs in the Pantanal region, without detection of PRV infectious particles.

Discussion and Conclusion

Monitoring and surveillance of wild or domestic pig's populations are important for disease control, especially for diseases controlled by eradication programs, as PRV, avoiding the reintroduction of PRV in areas considered free of disease. The methodology used here is available for this use in PRV controlled regions. The absence of PRV prevents further molecular studies of the variability of different PRV isolates from Pantanal feral pigs. Thus, this work shows that Pantanal feral pigs had previous contact with PRV but there is no evidence that these feral pigs pose a risk for commercial swine production with biosecurity measures in place.

References

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