

**TITLE**

**SALIVARY ANALYTIC PROFILE FOR HEALTH STATUS CHARACTERIZATION**

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**CONTENT**

- Background and Objectives: Saliva has been widely used for monitoring, surveillance and detection of disease in porcine populations in the last 10 years. High sensitive but low specific biomarkers have been explored in saliva for disease detection; however, its implementation in the field is still far from being achieved. The present work provides a novel approach to bear the use of salivary biomarkers for health status characterization in field conditions. - Material & Methods: 45 pigs from a farm with documented disease outbreaks before the study were selected. 20 clinically healthy animals were sampled several months after the documented outbreak. Five groups of animals were performed according to the veterinary clinical examination: clinically healthy pigs, pigs with lameness, rectal prolapse, signs of respiratory distress and growth rate retardation. Saliva samples were collected and used for the quantification of C-reactive protein (CRP), haptoglobin (Hp), adenosine deaminase (ADA), total antioxidant capacity (TAC), zinc (Zn), copper (Cu) and selenium (Se) using previously validated assays. - Results: The most sensitive biomarkers for detect disease were Cu followed by ADA and Pb due to altered levels in all diseased animals were observed, excepting those pigs suffering from growth-rate retardation, which showed exclusively altered Cu levels. The group of pigs with lameness and rectal prolapse showed increases in the levels of CRP and Hp but altered TAC levels were only detected in pigs with growth-rate retardation that shown also altered Se concentrations. - Discussion & Conclusion: Each parameter studied offers complementary information for disease characterization, thus a salivary analytic profile including several biomarkers should be performed in order to accurately differentiate between pathological conditions in the field. However, further studies are necessary to understand the mechanism underlying each condition.