

# Comparison between two methods of serological analysis in samples for Gumboro and Reovirus

Eduardo Correa Muniz<sup>1</sup>, Gleidson Biasi Carvalho Salles<sup>2</sup>, DIRCELIO VANDRE NASCIMENTO JUNIOR<sup>2</sup>, Antônio José de Lima Neto<sup>2</sup>, Josias Rodrigo Vogt<sup>3</sup>, Camila Marinelli Martins<sup>4</sup>

<sup>1</sup>Zoetis (Aves) , <sup>2</sup>Zoetis, <sup>3</sup>Zoetis (Laboratório Saúde Animal) , <sup>4</sup>AAC&T Consultoria em Pesquisa Ltda (Pesquisa)

*e-mail: eduardo.muniz@zoetis.com*

Serological tests are a fundamental tool to measure the intensity of vaccine responses in birds and ELISA (Essay Linked Immunosorbent) is widely used in poultry. One of the applications of ELISA is to evaluate the level of antibodies in breeder parent stock, seeking to estimate the amount of transfer of maternal immunity by the egg yolk. For Gumboro disease (IBD) and Reovirus (REO), these analyzes are especially important, as both have strong dependence on maternal protection. This study sought to make a comparison between two commercial ELISA kits in the same samples of breeder birds vaccinated against Gumboro disease and Reovirus. 596 blood samples were collected from a flock of birds vaccinated with live and inactivated vaccine against Gumboro and Reovirus diseases. The assay was performed under the same conditions (laboratory, equipment, people) and samples were analyzed in pairs with two different ELISA kits. Data were descriptively analyzed with the frequency of positivity in each diagnostic test. Then, the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and accuracy of test 1 were analyzed using test 2 as a reference for IBD and REO. Then, the quantitative serologies were analyzed descriptively and the non-parametric approach was chosen, given that IBD and REO were not normally distributed (Shapiro-Wilk p-value<0.05). The comparison between test 1 and 2 was performed with the Wilcoxon test and the correlation was tested with the Spearman correlation coefficient. Sensitivity, specificity, PPV, NPV and accuracy for IBD were 96.1%; 91.7%; 97.0%, 89.4% and 94.9%. For REO they were respectively 76.1%; 100.0%; 100.0%; 61.0% and 90.9. The correlation between the quantitative serology of test 1 and 2 was 0.740 for IBD and 0.705 for REO, both considered moderate. It is concluded that there were significant differences between the kits, therefore, for an assertive analysis, the veterinarian must always take into account the standards and history of each kit. Although both kits showed a high level of accuracy, they present different curves that should be considered as a specific baseline to compare results.