Evaluation of Serum Antibody Titers Against Newcastle Disease in Broiler Poultry in Maputo and Matola Regions, Mozambique

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Abstract:

Newcastle disease (ND) is very infectious, greatly contagious and fatal viral disease of poultry and other birds. Biosecurity and efficient vaccination are two important tools to control the disease. Although broiler poultry is regularly vaccinated, ND outbreaks are yearly reported in Mozambique, which may indicate poor immunization. To test this hypothesis, the objective of the study was to evaluate the antibody titers against ND in commercial unvaccinated day old chicks and vaccinated adult chicken broilers raised in small farms in Matola and Maputo regions. Serum samples were collected from unvaccinated broiler day-old chicks (n = 250) and vaccinated adult broiler chicken (n = 300). Serum samples were analyzed by a commercial indirect ELISA. Our findings demonstrated that one day old chicks presented high protective antibodies titers and good and low coefficient of variation (CV), which suggested optimal maternal immunity transfer. Only 23.6% of broiler serum sample had protective antibody titers (GMT > 1000) and more than 2/3 were seronegative (GMT = 0). Additionally, as little as 13.3% of analyzed flocks was protected against ND. Taken together, this data suggest that the evaluated adult broiler poultry population were susceptible to ND, which may explain the yearly ND outbreaks reported in those regions.

Key Word:
Newcastle disease, ELISA, serology, chicken broiler, Mozambique

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