TITLE: PRELIMINARY RESULTS OF THE *RANAVIRUS* EXPERIMENTAL INFECTION IN NILE TILAPIAS (*OREOCHROMIS NILOTICUS*)

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ABSTRACT:

Ranaviruses stands out among the main viral pathogens affecting ectothermal animals, on which studies in Brazil remain limited. Ranaviruses are viruses that cause widespread necrosis, focal haemorrhages and cellular apoptosis in infected animals. Detailed knowledge of the pathogenicity of these agents in tilapias is important to understand the development and severity of the dissease, due to the significant growth of the Brazilian production of this fish. The present project aims to carry out experimental infections in Nile tilapias (*Oreochromis niloticus*) with a *Ranavirus* strain detected in Brazil, evaluating the pathogenesis and viral load in infected animals. In this study, 100 animals weighing on average 30 grams were used. The *Ranavirus* strain was isolated and maintained in BF-2 cells. After the adaptation period, the fish were divided into 5 groups of 20 animals each and infected with *Ranavirus* at different concentrations expressed in $TCID_{50}$/mL (10^1, 10^2, 10^3 and 10^4) or culture media (control) by intracelomatic inoculation of 0.1 mL of the infected culture. Two fish of each group were collected on days 4, 12, 18, 25 and 60 post-inoculation, and 1mL of blood from each animal was collected for complete blood and differential leukocyte counts, and morphological evaluation of the blood. After collection, the animals were anesthetized and sacrificed using 1% benzocaine in water. Macroscopic examination of the infected tilapias showed a number of changes, such as: dark and reddish pigmentation on the surface of the animals, changes in the eyeball and exophthalmos, liver pallor and white spots, erythema in the submandibular region and yellowish bile in most fish submitted to the higher viral concentrations. The most significant hematological results were an expressive increase in the number of lysed erythrocytes, from 2 to 3 times greater than the control at 4 day post-infection, increased proportion of young erythrocytes at 12 day post-infection, and the presence of reactive lymphocytes at 4 day post-infection. Subsequent molecular analysis, histopathology and immunohistochemistry in the samples from infected animals will complement the findings described here. These results contribute to better understanding the infection caused by a Brazilian *Ranavirus* strain in Nile tilapias.

Keywords: *Ranavirus*, Nile Tilapia, experimental infection, infectious diseases of fish

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