TITLE: HISTOLOGICAL CHANGES IN SKIN OF NILE TILAPIA EXPERIMENTALLY INFECTED WITH *Aeromonas hydrophila*

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ABSTRATC:

Nile tilapia is a fish of great economic importance. However, with the development of intensive systems, erroneous management practices can damage the skin of animals and this can become a gateway to several pathogens like *Aeromonas hydrophila*, which requires a stressing agent on the animal to develop the disease. The objective of the study was to verify histopathological changes in the skin of Nile Tilapia experimentally infected with *A. hydrophila* at different times of inoculation. Nile Tilapia (*Oerochromis niloticus*), with average weight of 130g ± 3.0g were placed individually in aquaria in two inoculated experimental groups (T1 = control, saline solution and T2 = solution of *A. hydrophila* at concentration 1, 53 x 10^8 CFU. In stress induction all animals were submitted to pH 9.0 for 96 hours, followed by inoculation with the different treatments. For histopathological evaluation of the skin, the organs were collected at 6, 24 and 48 hours. After the samples were dehydrated in a battery of alcohol (70%, 80, 90 and 100%), it was washed with 10% buffered formalin for 12 hours. And placed in paraffin, being sectioned in 5 μm microtome and finally stained with hematoxylin-eosin. With coloration it was possible transverse structures that maintain the architecture of the dermis, presence of hypodermis and melanophores in the epidermis at all times post inoculation. At 6 hours of pathogen inoculation, epidermal detachment and evident interstitial edema were observed, as well as a mild inflammatory infiltrate in the dermis. After 24 hours of inoculation there is detachment, edema and disorganization of the collagen fibers besides intense inflammatory infiltrate and hyperproliferation and thickening of the epidermis. With 48 hours of inoculation there is detachment of the dermis epidermis produced by edema, thickening and appearance of innumerable vacuoles along the epidermis related to the production of mucus by goblet mucous cells and claves. The histopathological changes found in different times of infection showed the evolution of the inflammatory process in the different times of inoculation, being compatible with infectious processes in fish.

Keywords: *Oerochromis niloticus*, inoculated, hematoxylin-eosin, epidermis.

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