

TITLE:

EVALUATION OF RESISTANCE TO *Streptococcus* IN DIFFERENT VARIETIES OF TILAPIAS.

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ABSTRACT:

Streptococcosis is one of the major diseases affecting tilapias from Nile it causes many economic losses. Select resistant animals are a viable method to improve productivity. In order to evaluate resistance in tilapias from Nile varieties against *Streptococcus agalactiae* bacteria, an experiment was conducted with 180 tilapias of four varieties, three commercial (VC1, VC2 and VC3) and one of UFLA. Five aquariums were used for each variety, one of them being the control. Fish were inoculated intraperitoneally with 10⁷CFU / fish of *S. agalactiae*. One animal from each aquarium was sacrificed at 24 h, 48 h, 72 h, 96 h and 360 h after inoculation. Serum and tissues were collected for evaluations and a randomized experimental design was used in a factorial scheme (4 varieties x 5 times) For the lysozyme and antiprotease activity parameters using the Scott-Knott averages test and the Dunnett's test comparing inoculated and uninfected fish, as well as histopathology in different tissues and immunohistochemistry (IHC). A p value <0.05 was established as statistically significant. All the inoculated varieties had higher lysozyme activities than the non-infected fish (p = 0.001), but did not differ among them; There was a difference (p=0,001) according to the time after inoculation, with a linear increase of 24 to 72 h. All inoculated strains resulted in antiprotease activity similar to uninfected fish (p = 0.269), however, there were differences according to the time after inoculation (p = 0.042), manifested in the first 48 h. Histopathological lesions of gills, spleen and liver were analyzed by the chi-square test, finding differences between UFLA and commercial varieties, being the most significant in spleen: white pulp hyperplasia, cell necrosis due to the presence of macrophages, neutrophils and bacterial colonies. In IHQ was observed the presence of bacteria in tissues or within the cytoplasm of macrophages. In hepatopancreas: retention of biliary fluid, discrete steatosis and increase in the number of MMC. In the gills: interlamellar hyperplasia. Only one fish presented lesions in the CNS, of the VC2 variety, characterized by moderate non-suppurativemeningoencephalitis. These results demonstrate that there are animals with a better response to the resistance test than others and are of extreme importance for the diagnosis and mechanisms of selection of more resistant animals.

Key words: *Streptococcus agalactiae*, *Oreochromis niloticus*,
GENETIC SELECTION

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