



XIII Congresso de ECOLOGIA

III International Symposium of Ecology and Evolution

Múltiplas ecologias: evolução e diversidade

08 a 12 de outubro de 2017 • UFV - VIÇOSA | MG

RELATIONSHIP BETWEEN LAND USE AGRICULTURAL AND MORE SEVERE HISTOPATHOLOGY IN *ANCISTRUS MULLERAE* IN THE IGUASSU ECOREGION

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Tema/Meio de apresentação: Biologia da Conservação/pôster

Aquatic environments are much more dependent on their watersheds, especially for the allochthonous input of energy, as well as subject to contamination by various stressors. In this context, this study aimed to evaluate histopathological biomarkers of liver and gills of catfish endemic, in order to test the hypothesis that in environments under intense land use by agricultural activities occur histopathological alterations more severe. Samples were collected by electrofishing technique in seven streams in the Lower Iguazu basin quarterly from August 2015 to February 2016. Gills and livers of *A. mullerae* (n=122) were processed according to routine histological (Harris's Hematoxylin and Eosin, Alcian Blue/Periodic Acid Schiff and Toluidine Blue) and examined by light microscopy. The histopathological alterations observed in fish from the streams with higher percentage of natural vegetation cover were considered modest and indicated normal functioning of the organ (edema, hyperplasia, leukocyte infiltration). In streams with higher rural influence, were registered moderate damage to severe (aneurysm, vacuolization and cytoplasmic degeneration, pyknotic nucleus). The abundance of chloride cells was significantly increased in the gills of *A. mullerae* collected in rural streams, and mucous cells were more abundant in the rainy period in individuals from most stream. Significant differences were observed in histopathological index (HI) of gill and liver where severe histopathological alterations occurred in fish whose streams exhibit greater influence agricultural. Alterations were more severe in the liver than in gills, indeed related to its key role in detoxification of xenobiotics. We conclude that the increased agricultural use with reduction of riparian forest cause harmful effects in fish. Thus, our work provides important contributions to the conservation and management of natural resources, since it is a pioneer in demonstrating the effect of gradients of agricultural influence in field conditions on biomarkers of an endemic species.

We thank CAPES for granting a Master scholarship, UNIOESTE and to all our colleagues for their help in fieldwork.