

The correlation between parasitic nematode load and SRAT and GSH as environmental biochemical markers in *Plagioscion squamosissimus* (Heckel, 1840) (Perciformes, Sciaenidae), acquired in the Estuarine Region of the State of Amapá, Amazonia, Brazil

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Abstract

Plagioscion squamosissimus is a sciaenid fish commonly known as the South American silver croaker. In the Amazon it's a lot of fish caught for food consumption. Although it is frequently studied, it's one of the most important species in Amapaense ichthyofauna, however, few reports are related to biochemical markers. The objective of this study was to investigate the relationship of the Nematode Parasite Load (NPL) in the specimens with the possible deleterious effects on the levels of oxidative stress markers in *P. squamosissimus*. A total of 14 specimens of silver croaker were obtained in 2016 in the estuarine region of the state of Amapá. The fish were transported to the "laboratório de Morfofisiologia e Sanidade Animal da Universidade do Estado do Amapá" where they were anesthetized with cold water and desensitized by cervical dislocation for macroscopic analysis, with the aid of magnifying glasses, and then necropsied and checked viscera for the analysis of material collected under a light microscope that found Nematode (NPL) 64.28%, but no other parasites showed higher significant results in the biochemical correlations such as Acanthocephala, Didymozoidae, Ergasilidae and Isopoda. After necropsy, portions of the liver (1g) were removed, homogenized in 10 ml of PBS buffer (0.2M), and aliquots of the homogenate were used for the quantification of reduced glutathione through the Ellman's reagent, thiobarbituric acid reactive substances (SRAT) and total protein content. With NPL, the results of the indicators of biochemical changes were analyzed by means of linear regression (R^2) correlations. The correlation between (NPL) and hepatic biochemical alterations of the (SRAT) showed a positive relation ($R^2 = 0.347$). However, when correlating (NPL) and Glutathione (GSH), the correlation was low ($R^2 = 0.0482$). By the present result, it is assumed that there is a relationship between (NPL) and the level of lipoperoxidation when compared to other parasites that presented on average a R^2 lower than a validation of factor of relation, but the correlation between the factors (NPL) and (GSH) were considered irrelevant. Studies such as these are necessary to understand the parasite x host relationship and to understand its ecological dynamics.

Keywords: Analysis, Change, Collection, Regression, Relation.