

**P2.2.11. OXIDATIVE STRESS ENZYMES AND  
MITOCHONDRIAL BIOENERGETICS IN WILD LIZA SALIENS  
EXPOSED TO HEAVY METALS**

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The Esmoriz-Paramos coastal lagoon represents an ecosystem of great physical and ecological significance. However, as a result of industrial, agricultural and anthropogenic activities this habitat has been progressively degrading over the last decades. The heavy metal contamination is an important factor to the decline of sediments quality and may adversely affect fish health. In the present work the leaping grey mullet *Liza saliens* was studied because it is the dominant endemic species in the lagoon. It is a filter feeder and also being a detritus-mud feeder, it is therefore exposed to contaminated sediments.

Previous work has shown that the mean sediment metal concentrations were 234 mg Zn/Kg d.w. and 84 mg Cu/Kg d.w. Concentrations of zinc and copper were also determined in the gill, muscle and liver of *Liza saliens*, older than 6 years. The highest metal concentrations were observed in the liver (254 mg Cu kg<sup>-1</sup>) and gill (114 mg Zn kg<sup>-1</sup>). A positive correlation between copper content in liver and fish age was found, suggesting the loss of copper homeostatic capacity and its bioaccumulation.

In this study, the variations of mitochondrial bioenergetics (O<sub>2</sub> consumption), physiological parameters (condition factor and liver somatic index), antioxidant defences (superoxide dismutase and catalase), total protein and lipid peroxidation, were evaluated in mullet liver. The purpose of this work was to assess fish responses to chronic metal exposure using accepted biomarkers and others such as mitochondrial bioenergetics.

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