

REPRODUCTIVE AND HISTOPATHOLOGICAL CHANGES IN THE SEA URCHIN *PARACENTROTUS LIVIDUS* IN THE PRESENCE OF CONTAMINANTS.

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RESUMO

INTRODUCTION: The presence of contaminants in the marine environment has been of great concern in recent decades. This is because, among other consequences, pollutants can cause reproductive changes and damage to the tissues of marine invertebrates that live in affected environments. Within this context, histopathological analyzes are considered sensitive tools to detect the effects of the pollutant's compounds in some animals. **OBJECTIVE:** In July 2017, on the coast of Peniche/Portugal, there was an accidental discharge of hydrocarbons at Praia do Abalo, from the supply system of a company's boiler. Therefore, this work was developed with the objective of contributing to the evaluation of the impacts of this event using histopathological lesions and reproductive alterations as biomarkers in the sea urchin *Paracentrotus lividus*. **METHODS:** For this purpose, 30 sea urchins were collected from two different points on the coast of Peniche (called in this study as Impacted Shore (IS) and Reference Shore (RS)) in the months of July, August and September 2017. The gonads of the sea urchins were removed and submitted to quantification of the trace metals Cd, Pb, Ni, Fe, Mn, Zn and Cu by Atomic Absorption Spectrometry, and histological and histopathological analyzes were realized to detect the presence of lesions or other changes that could be indicative of an environmental pollution scenario. **RESULTS:** The results showed that contaminants were present in the two sampling stations throughout the study period, except for Cd, which was not detected on any of the sampling stations in September. The study also showed that the average concentrations of the metals Zn and Cd were significantly more expressive in female gonads than in male gonads of *P. lividus*. Most of the recorded histopathological indices did not vary significantly between the sampling stations, except for the IHPA index membrane dilation and the IHPA atrophy, which in July, on the IS, were significantly higher than on the RS. Positive correlations were observed between Cd and Cu elements and IHPAs resorption, dilation and atrophy. There was also a delay in the development of the gametogenic cycle of sea urchins, especially on the IS. **CONCLUSION:** In view of the results obtained in this work, it is concluded that sea urchins of the species *P. lividus* respond strongly to direct exposure to contaminants, in histopathological levels and reproductive function. The work strengthens the use of histopathological and reproductive biomarkers in this species as powerful and significant tools to assess the effects of pollution on ecosystems.

PALAVRAS-CHAVE: Hydrocarbons, Biomarkers, Histopathological lesions, Reproductive Function, *Paracentrotus lividus*.

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