

## **Seasonal variation of catalase and heavy metal enzyme (Pb, Cd, Ni) in *Pinctada radiata* in Persian Gulf, Iran**

### **ABSTRACT**

We have different possibilities and tools to assess the impact of pollution on marine ecosystems. The ecotoxicological approaches are based on the use of biomonitors and biomarkers. The purpose of our study was to evaluate the antioxidant enzyme catalase (CAT) as biomarkers in an edible species, *Pinctada radiata* (Mollusca, Bivalvia) associated with the environmental pollution (heavy metal, Cd, Pb, Ni) in the Persian gulf. Samples were collected seasonally from March 2012 till March 2013 at three stations in the Persian gulf (Nakhilo, Hendorabi and Lavan Island). Mollusc bivalves (*Pinctada radiata*) with the same shell length (40-50mm) were collected from the sampling sites, transferred to the laboratory and dissected the same day. The mantle was dissected and samples were prepared for biomarker analyses and measuring the heavy metal in soft tissue. The enzyme concentration was determined by using standard methods. Biochemical data showed no significant correlation. The results concluded from the amount of heavy metals in the sediment and soft tissue of pearl oyster (*Pinctada radiata*) show no significant correlation with the level of catalase enzyme. The present study strongly suggests that monitoring programs should compare sites with similar physicochemical characteristics when using a complementary biomarker approach.

**Keyword:** *Pinctada radiata*; Persian gulf; CAT; Heavy metal