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thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-microplastic-intake-enzymatic-responses-mytilus-galloprovincialis-aquaculture-capo-et-al-2021-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-microplastic-intake-enzymatic-responses-mytilus-galloprovincialis-aquaculture-capo-et-al-2021.jpg{/rokbox}

**X. Capo**, **M. Rubio**, A. Solomando, **C. Alomar**, **M. Compa**, A. Sureda, **S. Deudero**, 2021.
**Microplastic intake and enzymatic responses in *Mytilus galloprovincialis* reared at the vicinities of an aquaculture station.**
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Abstract: Aquaculture is a potential source of microplastics (MPs) that could be strong stressors for marine organisms. In this study, we evaluated the effects of MPs derived from aquaculture in antioxidant defences and oxidative stress markers in gills of *Mytilus galloprovincialis*. Mussels were distributed in three areas with different impacts: inside aquaculture cages, Control 1 (located inside Andratx harbour) and Control 2 (located in a no-anthropized area). Samples were obtained along three different time periods in May (T0), July (T60) and in September (T120). At each sampling period, mussels' biometric measurements were taken, and tissue samples were kept frozen for biochemical determinations and to determine the intake of MPs. An increase in MPs intake was detected throughout the study, and this increase was significantly higher in samples from the aquaculture cages. Similarly, antioxidant enzyme activities (catalase, superoxide dismutase, glutathione reductase and glutathione peroxidase) were significantly higher in samples from cages at T120. Additionally, a similar tendency was observed in glutathione-s-transferase, with a higher activity in the aquaculture cages at T60 and T120. Malondialdehyde and carbonyl protein derivates as a marker of oxidative damage were also measured and samples from aquaculture cages presented higher oxidative stress markers, mainly in T120. In conclusion, living in environments exposed to aquaculture activities at sea may imply a higher intake of MPs which in turn might cause an antioxidant response in *M. galloprovincialis* which is not enough to avoid oxidative damage.

Keywords: Anthropic pressure, Microplastics, Oxidative stress, Mussels, Pollution, Aquaculture