OPTIMIZATION OF A METHOD FOR DETERMINATION OF ANTIFOULING PAINT BOOSTER BIOCIDES IN MARINE WATER SAMPLES

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From 1970, to avoid the grown of aquatic organisms on vessels hulls, Tributyltin (TBT) has been added to paint of ships. This compound has shown a high toxicity in non target species like bivalves and gastropods of commercial interest (Hoch, 2001). For this reason its use is banned in UE and other countries. To replace it, other biocides, known as booster biocides are used in the antifouling commercial formulations. Many of them are employed in more applications although others like Sea Nine and Irgarol 1051 has been specifically designed to this function.

Now there is a broad spectrum of compounds that are used together, and are released into marine ecosystem. They also present a high toxicity in non target species like algal (Arrhenius *et al.*, 2006), macrophytes (Lambert *et al.*, 2006), and invertebrates (Manzo *et al.*, 2006). For this reason are necessary analytical methodologies that allow us determinate these compounds in different marine matrix, like water, sediments and organisms. These compounds are present in marine samples at low concentration; therefore an extraction and preconcentration step is needed prior to their determination. Solid Phase Extraction (SPE) methodology can be used for this purpose.

In the present study we optimized the experimental parameters for the extraction, preconcentration and determination of seven biocides commonly employed (Thiram, 4-chloro-3-methylphenol, Diuron, TCMTB, Chlorothalonil, Dichlofluanid and Irgarol 1051) in marine water samples. The optimized methodology will be employed for the temporal and spatial monitoring of these compounds in marine water samples coming from marinas and ports of Gran Canaria Island.

References:

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