

Title: **Pesticides analysis by macroporous ceramic passive samplers.**

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A large amount of pesticides have been produced and dispersed into the environment, where they can affect the environment with detrimental effects to aquatic ecosystems and human beings.

The aim of this project was to develop a method for the monitoring of pesticides in water based on passive sampling technique with a macroporous ceramic passive sampler (MCPS). This passive sampling device consists in a porous ceramic cylindrical tube which allows a high diffusion of contaminants. The water impregnated at the tube acts as a diffusion barrier for the pollutants, which are retained by the adsorbent which is placed inside the ceramic cylindrical tube. The flow and adsorption of the pollutants depends on their diffusivity and chemical gradient through the ceramic membrane.

This study discusses the use, calibration and performance of the MCPS for the monitoring of pesticides in water with different adsorbents, such as C18 (EC), ENV+ and C18 (2). The MCPS was calibrated with C18 (2) adsorbent for 15 pesticides over time periods up to 17 days in spiked water under controlled laboratory conditions. Optimal uptake was accomplished for 9 compounds: pyraclostrobin, fludioxonil, kresoxim-methyl, tebuconazole, metalaxyl, pendimethalin, prosulfocarb, isoproturon and dimethoate. Triadimenol, chlortorulon and tebufenpyrad did not work as expected, whereas oxyfluorfen, diclofop and 2,4-dichlorophenoxyacetic acid were not detected. To conclude, the MCPS using C18 (2) as adsorbent was adequate to monitor some of the pesticides, indicating that its future deployment in river water during approximately 15 days would be able to detect these contaminants at levels of ng- μ g.