

THE USE OF INTEGRATIVE PASSIVE SAMPLERS AS A SOURCE OF CONTAMINANT MIXTURES IN ECOTOXICOLOGICAL LABORATORY EXPERIMENTS

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The INRAM project aims to introduce a new application of passive sampling devices in ecological toxicity testing. Conventional (laboratory) ecotoxicity studies are mostly performed by exposing test organisms to various (high) concentrations of a single test compound. This clearly does not reflect *in situ* conditions: i.e. exposure to mixtures of low levels of various micro-pollutants. In order to expose organisms to environmentally realistic contaminant mixtures, this study explored a novel use of integrative passive samplers. Firstly, the dynamics of the contaminant release from the samplers was studied in the presence of organic material, i.e. algal cells. This study showed that the samplers released the compounds into the test medium as expected. Constant concentrations were achieved in the test medium, but the target concentrations (based on the amount of compound spiked on the samplers) were not reached. Additional experiments will be carried out in order to improve the dynamics of contaminant release. Secondly, samplers were used to collect micro-pollutants from three Belgian coastal harbours and were used 'inversely' as a contaminant mixture source in laboratory toxicity assays with *Crassostrea gigas* larvae. Significant differences in normal development of the oyster larvae were observed between the three harbours. Within each harbour a pollution gradient was apparent. These results show that the targeted application of passive samplers is feasible. As these passive samplers also allow to determine the aqueous concentrations of otherwise (nearly) undetectable trace compounds, they could be a powerful new tool in environmental toxicology.