

EUROPEAN AMPHIPOD *GAMMARUS FOSSARUM* AS A TEST ORGANISM TO ASSESS SEDIMENT TOXICITY

Freshwater sediments often act as sinks for various contaminants such as metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pharmaceuticals and personal care products¹ (PPCPs), per- and polyfluoroalkyl substances². These pollutants accumulate over time and can have significant ecological consequences by affecting benthic organisms. Sediment's toxicity is also a challenge for their management in the context of dredging³. *Gammarus fossarum*, a European freshwater amphipod, is widely used in ecotoxicology due to its sensitivity to pollutants and its ecological relevance in European water systems^{4,5}. This species could be a good candidate to complete a standardised bioassay already existing for the North American amphipod *Hyaella azteca* based on the survival and the growth (ISO 16303:2013).

The aim of this communication is to present results of my thesis project that focuses on the proposal of *Gammarus fossarum* as test organisms for assessing the chemical toxicity of sediments. In order to develop these laboratory tests, we had, at first, to evaluate the effects of confounding factors, such as the particule size and the carbon organic content, on the endpoints used on *Gammarus fossarum*: survival, feeding rate, and reproduction. At second, we wanted to determine threshold values under which there would be significant effects on biological endpoints cited before. For that, we studied more than a hundred sediments representative of water bodies at a national level. Last but not least, this work consisted in evaluate sediment toxicity in the context of two case studies (dredging and lake monitoring). Therefore, the purpose here is to present these results.

Keywords : amphipod; sediment; toxicity; bioassays; ecotoxicity

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