



Transport and dissipation study of the herbicide terbuthylazine and its major metabolites in wetland sediment substrates planted with *Typha latifolia* L.

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ABSTRACT

It is widely recognized that the organic micropollutants, coming from the intensive agricultural use of land, are the major threat against surface and ground water. However, they are an environmental engineering challenge in order to encounter the pollution by the use of constructed wetlands. The aim of this work is the study of the potential transport and dissipation of the herbicide terbuthylazine (TER) and its major hydroxy and dealkylated metabolites at the vertical profile of a constructed wetland sediment substrate, planted with *Typha latifolia* L., in order to determine the processes and study the possible remediation mechanisms for wetland ecosystems contaminated by the aforementioned substances. The results show that the dissipation of TER exhibits a gradient behavior through depth of the sediment substrate of wetlands and its major degradation products follow the effect of biotic and abiotic mechanisms of degradation in the bioreactor substrate. Moreover, the greater recovery of the herbicide appears in the sediments substrate with zeolite content.

Keywords: Remediation; Biodegradation; Constructed wetland; *Typha latifolia* L.; Sediment; Terbuthylazine metabolites; Zeolite

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