



Airlift bioreactors for hydrocarbon water pollution remediation in a tourism development pole

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ABSTRACT

Underwater sinkholes in Quintana Roo, Mexican Caribbean, are affected by the run-off of nearby highways promoting the presence of aromatic and polyaromatic hydrocarbons. Phenanthrene, naphthalene, and benzene derivatives were found as the most common hydrocarbon contaminants present in underwater sinkholes located in Cancún and Playa del Carmen, two well-developed tourism poles. This confirms the impact of urban activities related with the increased transportation of locals and tourists around these areas, in comparison with Holbox which is a recent touristic development where transportation of tourists and locals is scarce; there is no hydrocarbon detectable pollution. Additionally, the development of a new water cleaning approach by airlift bioreactors, using indigenous microbial consortium, shows promising results and may be used in future *ex-situ* remediation technique in tourism poles.

Keywords: Airlift bioreactor; Hydrocarbon; Water pollution; Tourism

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