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BIODEGRADATION OF PHENOLIC WASTEWATERS BY CALCIUM ALGINATE IMMOBILIZED *Aeromonas* SPECIES

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Abstract

Indigenous isolated bacterium *Aeromonas* sp. was immobilized in calcium alginate and the related immobilization parameters like bead diameter, inoculum size and the initial phenol concentration required for biodegradation were determined. The biodegradation activity was most efficient with 4 mm calcium alginate beads. The optimal immobilized biomass required was about 28 10^9 cells/mL. Compared with free-cell suspensions, the alginate matrix used for immobilization of cells provided better environment for the biodegradation of high phenol concentrations probably due to its protective effect. The alginate immobilized cells provided remarkable performance in experiments using elevated phenol concentrations.

Key words: Aeromonas, biodegradation, calcium alginate, immobilization, phenol

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