



Paper (5)

Biodegradation of the Organophosphorus Insecticide Diazinon by *Pseudomonas aeruginosa* Isolated from Agricultural Drainage Ditches

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Diazinon is an organophosphorous insecticide that is commonly used to control various agricultural and household pests and is frequently found as contaminant in water bodies. In the present study, a diazinon degrading bacterium was isolated from agricultural drainage ditches (Fayoum, Egypt) by enrichment technique. Based on morphological, biochemical and 16S rDNA gene sequencing, it was identified as *Pseudomonas aeruginosa*. A pure culture of *P. aeruginosa* was grown in minimal medium supplemented with diazinon as sole carbon source. The influence of diazinon concentration, temperature and pH on the bacterial growth and rate of diazinon degradation was investigated. The maximum capability of diazinon degradation (83.6 %) was achieved at concentration 400 ppm of diazinon at pH value 7.0 and temperature 30°C within 14 days. Therefore, *P. aeruginosa* can be used efficiently for the environmental cleanup of agricultural wastewater contaminated with high levels of diazinon.