



Paper (8)

Occurrence of Atrazine Biodegrading Bacterium "*Ochrobactrumoryzae*" In Agricultural Wastewater

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Atrazine is one of the most environmentally prevalent s-triazine groups of herbicides that inhibit photosynthesis of broadleaf and grassy weeds. Degradation time of this compound is about 200 days and is frequently found as a contaminant in ground water. In the present study, atrazine-degrading bacterium was isolated from agricultural drainage ditches (Fayoum, Egypt) by enrichment technique. Based on morphological, biochemical, and 16S rDNA gene sequencing, this bacterium was identified as *Ochrobactrumoryzae*. A pure culture of *O. oryzae* was grown in minimum media supplemented with atrazine as the sole carbon and nitrogen source. The influence of atrazine concentration as well as temperature and pH on the bacterial growth and rate of atrazine degradation was investigated. The maximum capability of atrazine degradation (83.5%) was achieved at a concentration of 400 ppm of atrazine within 9 days at a pH value of 9.0 and a temperature of 30°C. Therefore, *O. oryzae* can be used efficiently for the environmental cleanup of agricultural wastewater contaminated with high concentrations of atrazine.