



## Paper (6)

### **Bioremediation of the nematicide oxamyl by *Enterobacter ludwigii* isolated from agricultural wastewater.**

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Oxamyl is an important carbamate nematicide that is used for the control of nematodes in many economic crops in Egypt. It is characterized by high acute toxicity to mammals and aquatic organisms. Microbial degradation is the main approach controlling the environmental contamination with oxamyl. In this current study, using enrichment technique, oxamyl-degrading bacterium was isolated from agricultural drainage ditches of oxamyl-treated fields (Fayoum, Egypt). The isolated bacterium was identified as *Enterobacter ludwigii* based on the biochemical characterization and 16S rDNA gene sequencing. An axenic culture of *E. ludwigii* was grown in minimum salt medium enriched with oxamyl as sole carbon and nitrogen source. Moreover, the factors affecting on oxamyl degradation were investigated. The maximum capability of oxamyl degradation was achieved at 200 ppm of oxamyl within 6 days at pH value 7.0 and temperature 37°C. In conclusion, this study clarified the notable capability of *E. ludwigii* for the degradation of oxamyl from contaminated agricultural wastewater.