

Genetic Studies on Microbial Degradation of Some Environmental Pollutants

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ABSTRACT

The present study was conducted to investigate the role of locally microbial isolates in the biodegradation of dimethoate and methomyl insecticides. A number of 112 isolates were obtained from different areas of Fayoum governorate. Isolates varied greatly in their tolerance to insecticides used depending upon the applied concentration and tested isolates. 32 microbial isolates capable of assimilating dimethoate as carbon or nitrogen source. Whereas 24 strains used methomyl as carbon source. Active isolates were completely identified as *Pseudomonas aeruginosa* and *Bacillus SP*. These strains were examined for resistance against four antibiotics .The randomly amplified of polymorphic DNA (RAPD -PCR) technique was employed to detect the degree of similarity between strains. Plasmid profile of the original and cured strains revealed that selected insecticide gene(s) are located on plasmid.

Key Wards: Dimethoate, Methomyl, Biodegradation, Plasmid, Curing, Antibiotics, DNA, RAPD-PCR, *Pseudomonas aeruginosa*, *Bacillus sp*.