

Abstract

Role of microalgal strains in biodegradation of some pesticides.

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In the present study, five algal strains (*Anabaena oryzae*, *Nostoc muscurum*, *Spirulina platensis*, *Chlorella vulgaris* and *Scenedesmus quadricuda*) were used to remove malathion, an organophosphorous insecticide, from contaminated wastewater. The growth of algal strains was decreased as malathion concentration was increased. *N. muscurum* was recorded as more tolerant strain than the other algae. Whereas, *S. quadricuda* was recorded as the lowest tolerant strain to malathion. Treatment of algal strains with different concentrations of malathion increase total carbohydrate and protein content. SDS-PAGE analysis revealed that the tested strains grown in the polluted culture with malathion showed induction in the synthesis of certain polypeptides and repression of others. The algal cultures were further subjected to grow under P-limitation in absence and presence of malathion. The growth of algal strains under P-limitation recorded a very poor level. When the P-limited medium was amended with malathion, the algal growth and phosphorus content of cells were increased significantly. *S. quadricuda* recorded as the highest efficient strain (99.7%) to remove malathion followed by *N. muscurum* (91.6%) and the lowest efficient was *Sp. platensis* (64.6 %).
