

Tolerance, biodegradation and utilization of malathion, an organophosphorous pesticide, by some cyanobacterial isolates.

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A mixed cyanobacterial population consisting of *Anabaena oryzae*, *Nostoc elliposporum*, *Calothrix castellii*, *Tolypothrix ceytonica* & *Synechococcus* sp. was used to study the effect of malathion, an organophosphorus insecticide, on the growth and the diversity of the algal group structure. A sharp decrease in the growth of the algal population was observed by increasing the concentration of malathion. Amongst them *A. oryzae* tolerated high concentrations of this compound. Moreover, *A. oryzae* overtopped the other strains even in presence and absence of malathion. The other strains were more sensitive and they completely vanished from the algal population under higher concentrations of the insecticide (300–400 ppm). A unialgal culture of *A. oryzae* was further subjected to grow under N-limitation and P-limitation in absence and presence of malathion (100 ppm). A marked elevation in the chlorophyll "a", protein contents and the percentage of heterocystous cells of *A. oryzae* was recorded in presence of malathion indicating the stimulative effect of this compound on the growth and the nitrogen fixation process. Although, the growth of *A. oryzae* under P-limitation recorded a very poor level, a massive enhanced growth was obtained when the P-limited medium was amended with malathion (100 ppm). This study clarified that *A. oryzae* with its capability to utilize malathion as a sole phosphorus source under limited or unlimited nitrogen conditions might be considered as an inexpensive and efficient tool for the bioremediation of different organophosphorus insecticides from contaminated waste water.