



Biodegradation of Malathion by Selected Bacterial Isolates

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Abstract : Malathion in-vitro biodegradation study was conducted in liquid medium with two monocultures bacterial isolates; *Pseudomonas putida* and *Staphylococcus vitulinus* and two bacterial mixed cultures (F1 with F2) isolated from agricultural soil. The percentage degradation of malathion monoculture with *P. putida* (F1) was 47.18%, while with *S. vitulinum* (F2) was 44.24%. The results showed that the mixed bacterial isolates in malathion biodegradation efficiency is higher than the monoculture bacterial isolates. The percentage degradation of malathion by mixed culture was 98.32%. The result indicated that the two main degradation products resulted from bacterial degradation, namely malathion monocarboxylic (MMA) and malathion dicarboxylic acid (MDA), the first one may convert into the latter over time. Some other degradation products may occur, such as ethyl hydrogen fumarate (EHF) but in negligible amount.

Keywords: *Malathion, biodegradation, bacteria, agricultural soil, degradation products.*

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