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Effects of Acid Precipitation on the Bacterial Distribution in accordance with their G+C Content in Batch Culture System

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The G+C content of about 200 bacterial strains isolated from pH gradient microcosm were compared with the various pH range(7, 6, 5, 4 and 3) to their distribution. The G+C content of bacteria at all of the pH range were ranged from 22.8 to 78 mol%. More than 60% of the isolates had G+C values similar to those of the families *Enterobacteriaceae*(between 38 and 60%). The average G+C content of bacteria at neutral pH(pH 6 to 7) were 50.5 and 55.79 mol%, whereas a value of 59.56 and 56.44 mol% were found for bacteria at low pH(pH 3 to 4) values. The mole percent of G+C content increased accordingly as pH became lower 6 ~ 7(39% and 17%) to 3 ~ 4(41% and 56%, respectively). On the basis of the mole percent of G+C values, bacterial isolates at low pH(pH 3 to 4) were belong to the families *Pseudomonadaceae*, which were adapted to the acidic environmental conditions.

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Effect of Various Physiochemical Factors on the Degradation of Phenoxyherbicide 4-Chloro-2-Methylphenoxyacetic Acid by Soil Enrichment Culture

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The relationships between the phenoxyherbicide 4-chloro-2-methyl phenoxyacetic acid(MCPA) degradation by soil enrichment culture and several relevant physiochemical environmental parameters were examined. As concentrations of MCPA were increased, the degradation became inhibited. Biodegradation activity was higher at neutral pH or slightly acidic pH, but the activity was showed only partial degradation of MCPA at basic pH. The effect of inoculum size on the MCPA degradation was monitored. An increase in the inoculum reduced the lag period and accelerated the MCPA degradation. Increased concentrations of nitrogen and phosphorus as supplemental nutrients were inhibitory to the degradation of MCPA, respectively. Addition of yeast extract accelerated MCPA degradation, whereas the supplemented glucose inhibited the degradation of MCPA.