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Phosphatase Activity in Cheonho Reservoir

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Phosphatase activity was measured with other environmental factors in Cheonho reservoir in 1994. It ranged from 95 to 1685 $\mu\text{M L}^{-1}\text{h}^{-1}$ and was correlated significantly with chlorophyll-a. Such a close relation well matched the fact that over 90% of phosphatase activity was detected in $>3\mu\text{m}$ fraction. The phosphatase activity was also correlated negatively with dissolved inorganic phosphate concentration, which implies of derepression of phosphatase production by phosphate limitation. Significant correlation between phosphatase activity and BOD was analyzed and BOD appeared to be closely correlated with chlorophyll-a, too. A great part of organic materials seems to be generated autochthonously by algae and extracellular enzyme even though allochthonous influence was thought to be stronger in Cheonho reservoir.

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Effects of Various 2,4-D-Degradative Plasmids on Degradation Capability and Competitiveness of Soil Microorganisms

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The effects of various 2,4-D-degradative plasmids on the axenic growth patterns, the degradation phenotypes, and the competitiveness of different host bacteria were evaluated in liquid cultures : the organisms and plasmids used were *Alcaligenes eutrophus*/pJP4, *Alcaligenes paradoxus*/p2811, *Pseudomonas pickettii*/p712, *Pseudomonas pseudomallei*/p745, *Pseudomonas cepacia*, and *Alcaligenes JMP228*. Depending on the type of plasmid containing the genes for the 2,4-D pathway, some transconjugants exhibited more versatile degradation capabilities. The plasmid and plasmid-host interactions determined specific growth rate and lag time, respectively, which were shown to be principal determinants of competitiveness among the strains, but relative fitness coefficient derived from the axenic culture was not always predictive for the mixed culture condition.