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Seasonal Variation of Primary Productivity in Kangjin Bay

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Primary productivity and physicochemical factors were surveyed seasonally at six sampling stations from February, 1998 to October, 1998. Determination of the primary productivity was performed *in situ* by isotope-method using $\text{NaH}^{14}\text{CO}_3$ and the correlations between primary productivity, chlorophyll-a, and environmental factors were analyzed by SAS package.

The range of primary productivity was $2.78 \text{ mgC/m}^3/\text{hr} \sim 4.92 \text{ mgC/m}^3/\text{hr}$ according to seasons. The primary productivity of summer showed the highest value and followed by those of autumn, winter, and spring in order. The primary productivities of stations 1, 2 which are the upper area, were lower than those of stations 3, 4, 5 and 6. The analysis of correlations between primary productivity, chlorophyll-a, and environmental factors showed that the primary productivity correlates with chlorophyll-a, underwater light intensity and concentrations of nutrients but reversely with salinity. These results mean that the freshwater from Tamjin River is the major source of influence of the primary productivity in Kangjin Bay.

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EVALUATION OF THREE TYPES OF ARTIFICIAL WETLAND FOR WASTEWATER TREATMENT

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For treatment of small quantity of domestic wastewater, three types of artificial reed (*Phragmites japonica*) wetland were constructed. The first constructed wetland (CW) was a free water system (FWS) with ten lanes of 2m width, and 200m of the total length of water flow and filled with fine sand to a depth of 0.6m. Second CW was a modified subsurface flow system(SFS) with air supplying system consisting of eight cells of 2m width by 15m and domestic wastewater supplied a method of stepfeed from settling tank. Third CW was a combined subsurface flow system (CSFS) consisting of 20 cells sized 2m width by 20 m by 0.6m depth and filled with small sized gravel(diameter 2~5cm). Simple mechanical facilities such as two aeration systems at the center of each cell were the key-points of this system. Water qualities of outflow from all CWs were legally proper.