Development of Bicarbonate Supply Methods for Wastewater Treatment Using the Microalga, *Tetraselmis* sp. KCTC12236BP

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The microalgae have been received attentions for their ability to remove inorganic nitrogen and phosphorus in eutrophic wastewater. Sodium bicarbonate can be used as carbon source for microalgae with its advantages of high water solubility, high carbon utilization efficiency and easiness of use in ocean cultivation. In bicarbonate supplied culture, however, biomass productivity was significantly lower than in 2% CO₂ bubbling cultures, so we focussed on possible solutions to the problems of bicarbonate as a sole carbon source. As the results, high carbon utilization efficiencies of 81% (1.1±30% in CO₂ bubbling culture) could be attained by pH control, and 20 mM bicarbonate fed batch cultivation showed the highest overall biomass productivity of 0.60 g/L/day (same to that of CO₂ bubbling culture). Implementation of pH-mediation mechanisms would help complete the technology for simultaneous microalgal biomass production and eutrophic water treatment along with CO₂ reduction.