

Effects of Fractionated Seawater on Biomass Productivity of *Tetraselmis* sp. KCTC12429BP

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Since huge water requirement is one of the constraints in commercialization of microalgal biofuels, using seawater is preferred for reducing microalgal biofuels production costs. The effects of seawater treatment methods on the biomass productivity of microalgae were investigated. Biomass productivity in seawater was lower than that in sterilized seawater. In order to identify the negative effect of seawater, filtration methods were used. Seawater was fractionated by using membrane filters with different sizes: (A) 0.2 μm , (B) 4 μm , (C) 8 μm and (D) 25 μm . The fractionated seawater was used for cultivation of *Tetraselmis* sp. KCTC12429BP with f/2-Si medium. Both biomass productivity and total fatty acids productivity were highest in the group B. The overall biomass productivity of group B was 32% higher than control group. Total fatty acids productivity of group B was 31% higher than that of group A. Although the biomass productivity was higher in group A than in control group, total fatty acids productivity was higher in control group. These results indicate that some factors in seawater affect not only biomass productivity but also fatty acids productivity. Further research will be identification of the factors in seawater affecting the microalgal growth and fatty acids productivity.