Enhanced growth rate of Microalga *Botryococcus braunii* using adsorbents

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Abstract

Botryococcus braunii, unicellular photosynthetic microalgae, was grown with three type s of adsorbents – mesoporous silica SBA-15, amine functionalized SBA-15 and natural clay kaolin, separately. Effect of these adsorbents on growth of B. braunii was measured in terms of specific growth rate (K). The local ambient conditions like temperature (i.e., 25-30 ºC), humidity (50-90%), natural sun light (0.4-0.8 mw/cm2), pH 6.8 -7.0 and 2-4% CO2 are found to be suitable for the growth of the microalgae. The growth rate of algae was 4 -times enhanced using mesoporous silica and 12 -times enhanced using natural clay (kaolin) as CO2 adsorbents compared to adsorbent-free growth medium.

Key words: Adsorbents, Biofuel, Botryococcus braunii, Growth Rate, Kaolin, Microalgae