

Enhanced growth rate of Microalga *Botryococcus braunii* using adsorbents

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Abstract

Botryococcus braunii, unicellular photosynthetic microalgae, was grown with three types 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 °C), 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

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