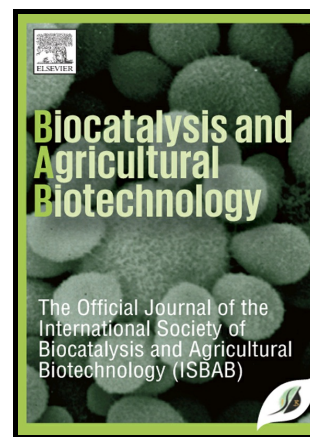


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**Immobilization of the green microalga *Botryococcus braunii* in polyester wadding: effect on biomass, fatty acids, and exopolysaccharide production**

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**Abstract**

*Botryococcus braunii* is a renowned source of biomass, lipids and hydrocarbons for biofuel production. However, this microalga also produces exopolysaccharides (EPS) which might be used industrially. The artificial immobilization of *B. braunii* has proven to influence its growth and metabolite yield. In this work, *B. braunii* was immobilized using 3 g/L of polyester wadding, a recyclable material no reported before as fixing matrix for this microalga. This inexpensive polymer was non-toxic to the cells and allowed their fixing during 2 months. After 24 days, the final biomass yield (g/L) was statistically higher ( $P < 0.05$ ) in immobilized ( $1.05 \pm 0.05$ ) than in suspended cultures ( $0.734 \pm 0.003$ ). The final EPS yield (g/L) was also higher in immobilized ( $0.094 \pm 0.008$ ) than in the suspended cultures ( $0.077 \pm 0.004$ ). In both cases, the sugar composition of the EPS (mainly 71.73 mol% galactose) and the profile of fatty acids were the same.

**Keywords**

*Botryococcus braunii*, immobilization, exopolysaccharides, biomass, biorefinery

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