

## Biosorption of nutrients by *Zygnema sterile* and *Lepocinclism textra* biomass in high rate algae culture system

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### ABSTRACT

The biosorption characteristics of N and P nutrients by *Zygnema sterile* and *Lepocinclism textra* biomasses were closely investigated using a lab scale high rate culture system. From operating this system, the following points were obtained: the calculated AGP was  $4.58 \times 10^{-3}$  mg/d; the maximum of DO generation was 5.8 mg DO/L during peak algal growth for 1403.97 Chl.-a  $\mu\text{g/L}$ ; this system generated an average of 0.77 mg/L DO/d; the fundamental biosorption mechanism can be considered as the movement of (+) and (-) electric charge on the algal biomass surface, similar to one of ion exchange; with the biosorption and passage of (-) ions onto and through the cell wall, respectively, the protomotive force becomes predominant.

**Keywords:** Biosorption characteristics of nutrients; *Zygnema sterile* and *Lepocinclism textra* biomasses; Ion exchange; Protomotive force

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