COD and nitrogen removal from sugarcane vinasse by heterotrophic green algae *Desmodesmus* sp.

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**ABSTRACT**

Vinasse is the main wastewater from the ethanol fermentation–distillation process, generated in large volumes during industrial sugarcane processing. *Desmodesmus* is a green algae genus with recognized ability to treat wastewater containing organic matter and to consume nutrients under heterotrophic growth conditions. Thus, the aim of this research was to evaluate *Desmodesmus* sp. growth in sugarcane vinasse. Results indicated slight elevation of pH, low oxygen, and low carbon dioxide consumption. Nitrogen and chemical oxygen demand (COD) removal were 52.1 and 36.2%, respectively. Specific growth rate of 0.15 h⁻¹ and high yield of COD to biomass at first hour (0.5 mg mg⁻¹) suggest the feasibility of biomass production of this green algae in sugarcane vinasse.

*Keywords: Vinasse; Green algae; Wastewater treatment; Desmodesmus*

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