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Using straw hydrolysate to cultivate *Chlorella pyrenoidosa* for high-value biomass production and the nitrogen regulation for biomass composition

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1 **Using straw hydrolysate to cultivate *Chlorella pyrenoidosa***
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13 **Abstract**

14 Heterotrophic cultivation of *Chlorella pyrenoidosa* based on straw substrate was

15 proposed as a promising approach in this research. The straw pre-treated by

16 ammonium sulfite method was enzymatically hydrolyzed for medium preparation.

17 The highest intrinsic growth rate of *C. pyrenoidosa* reached to 0.097 h⁻¹ in

18 hydrolysate medium, which was quicker than that in glucose medium. Rising nitrogen

19 concentration could significantly increase protein content and decrease lipid content

20 in biomass, meanwhile fatty acids composition kept stable. The highest protein and

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