

KANDUNGAN KARBOHIRAT, LIPID, DAN PROTEIN DARI KULTUR *Euglena* sp. PADA MEDIUM POME (*PALM OIL MILL EFFLUENT*)

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INTISARI

Sebagai spesies mikroalga yang memiliki kemampuan pertumbuhan paling cepat di air tawar, *Euglena* sp. dipelajari di bidang biologi dasar dan dikenal untuk menghasilkan produk bernilai tinggi. Air limbah POME digunakan sebagai media budaya karena kaya akan kandungan nutrisi, zat terlarut, nutrisi makro dan mikro dan memiliki potensi untuk meningkatkan kandungan metabolit seperti lipid, karbohidrat, dan protein. Selain itu, POME juga memiliki BOD COD yang tinggi sehingga perlu dirurai terlebih dahulu. Penelitian ini dilakukan untuk mengetahui isi BOD COD, pertumbuhan, biomassa, kandungan karbohidrat, lipid, dan protein dari *Euglena* sp. budaya di media POME. Penelitian dilakukan dengan menggunakan budaya *Euglena* sp. pada Medium Cramer-Myers (CM) sebagai kontrol dan konsentrasi menengah POME 0,5%, 0,75%, 1%, dan 1,25%. Pengolahan air limbah POME dapat menurunkan kandungan BOD COD setelah budidaya dan meningkatkan pertumbuhan budaya *Euglena* sp. pada konsentrasi 1%, biomassa $6,67 \pm 0,85$ g/L pada konsentrasi 1,25%, kandungan lipid tertinggi $1,85 \pm 0,15$ g/L pada konsentrasi 1%, kandungan karbohidrat dan protein berurutan tertinggi $2,34 \pm 0,35$ mg/mL dan $2,86 \pm 2,69$ µg/mL pada konsentrasi 1,25%.

Kata kunci: Biomassa, pertumbuhan, *Euglena* sp., POME

CONTENT OF CARBOHYDRATES, LIPIDS, AND PROTEINS FROM *Euglena* sp. CULTURE IN POME MEDIUM (PALM OIL MILL EFFLUENT)

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ABSTRACT

As a species of microalgae that has the fastest growth capability in freshwater, *Euglena* sp. was studying in the field of basic biology and produce high value products. POME wastewater was used as a culture medium because it was rich in nutrient content, dissolved substances, macro and micro nutrients and had potential to increase the content of metabolites such as lipids, carbohydrates, and proteins. In addition, POME also had a high BOD COD so it needs to be decomposed first. This research was conduct to find out the content of BOD COD, growth, biomass, the content of carbohydrates, lipids, and proteins from *Euglena* sp. culture in POME medium. The research was conduct using *Euglena* sp. culture on Medium Cramer-Myers (CM) as control and POME medium concentration 0.5%, 0.75%, 1%, and 1.25%. POME wastewater treatment can decrease BOD COD content after cultivation and increase the growth of *Euglena* sp. culture. at a concentration of 1%, biomass of 6.67 ± 0.85 g/L at a concentration of 1.25%, the highest lipid content of 1.85 ± 0.15 g/L at a concentration of 1%, the highest sequential carbohydrate and protein content of 2.34 ± 0.35 mg/mL and 2.86 ± 2.69 µg/mL at a concentration of 1.25%.

Keywords- Biomass ; Growth; *Euglena* sp.; POME