BIOMASSA DAN KANDUNGAN LIPID MIKROALGA KULTUR CAMPURAN KONSORSIUM GLAGAH DAN *Arthrospira maxima* PADA *THIN-LAYER PHOTOBIOREACTOR*

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INTISARI

Produksi mikroalga secara masal dapat dilakukan melalui kultivasi mikroalga campuran secara *outdoor* menggunakan *Thin-Layer Photobioreactor*. Efisiensi penggunaan medium untuk kultivasi masal mikroalga diharapkan dapat mengurangi biaya produksi namun tetap menjaga produktivitas mikroalga. Dengan demikian, perlu dilakukan penelitian untuk mengetahui pertumbuhan sel, peningkatan biomassa dan kandungan lipid mikroalga kultur campuran konsorsium Glagah dan *Arthrospira maxima* yang dikultivasi dengan BBM *(Bold's Basal Medium)*, medium Farmpion dan medium TEA (Thoriq Eko Arif) selama 7 hari. Densitas sel dihitung dengan metode spektrofotometri dan peningkatan biomassa diukur dengan metode berat kering. Selanjutnya kandungan lipid diukur dengan metode Bligh & Dryer dan kadar karbon ditentukan dengan metode gravimetri. Kultivasi mikroalga pada medium Farmpion menunjukan pertumbuhan sel, peningkatan biomassa dan kandungan lipid paling tinggi. Pertumbuhan sel mencapai 7,938 x 10^6 sel mL^{-1} di hari ke-7 dengan peningkatan biomassa mencapai 0.354 mg mL^{-1} di hari ke-7 dan kandungan lipid mencapai 0.142 mg mL^{-1} di hari ke-3.

Kata Kunci: Kultur campuran, konsorsium Glagah, *Arthrospira maxima*, *Thin-Layer Photobioreactor*, lipid, biodiesel

BIOMASS AND LIPID CONTENT FROM MIXED CULTURE OF GLAGAH CONSORSIUM MICROALGAE AND *Arthrospira maxima* IN *THIN-LAYER PHOTOBIOREACTOR*

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ABSTRACT

Biomass production of microalgae can be conducted through an outdoor cultivation of mixed culture by using Thin-Layer Photobioreactor. Efficient use of the medium for mass cultivation of microalgae is expected to reduce production costs nevertheless still maintained the productivity of microalgae. Thus, it is necessary to determine the cell growth, increased biomass and lipid content from mixed culture of Glagah consorsium microalgae and *Arthrospira maxima* using *Bold's* Basal Medium, Farmpion medium and Thoriq Eko Arif medium (TEAM) for 7 days. Cell density was measured by spectrofotometry method and biomass was measured by dry weight method. Furthermore, lipid content was measured by Bligh & Dryer method and carbon content was determined by gravimetric method. Microalgae cultivation in Farmpion medium had the highest cell growth, increased biomass and lipid content. Cell growth reached 7,938 x 10^6 cell mL^{-1} on the 7^{th} day with increasing of biomass reached 0.354 mg mL-1 on the 7^{th} day and lipid content reached 0.142 mg mL-1 on the 3^{th} day.

Kata Kunci: Mixed culture, Glagah consorsium, *Arthrospira maxima*, Thin-Layer Photobioreactor, lipid, biodiesel