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of Euglena gracilis IDN22 Cultures**
Muhammad Farrel Zharif Zidane, Prof. Dr. Eko Agus Suyono, S.Si., M.App.Sc.
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EFFECT OF VARYING MONOAMMONIUM PHOSPHATE CONCENTRATIONS ON GROWTH, CARBOHYDRATE, LIPID, AND PIGMENTS OF *Euglena gracilis* IDN22 CULTURES

M. Farrel Zharif Zidane
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Supervisor: Dr. Eko Agus Suyono, M.App.Sc.

ABSTRACT

The escalating global population demands for sustainable food sources, putting microalgae such as *Euglena gracilis* as a potential solution due to their rich nutritional profile and high adaptability. This study investigates the influence of varying Monoammonium Phosphate (MAP) fertilizer concentrations on the growth, biomass, metabolite and pigment production of *E. gracilis* strain IDN22. The research utilized a local strain cultured in Pasuruan, East Java, using a modified F1 medium where Triple Superphosphate (TSP) was substituted with MAP of three varying concentrations: 0.495 g/L (MAP0.5), 0.99 g/L (MAP1), and 1.98 g/L (MAP2), alongside a TSP control over a 15-day cultivation period. Parameters include cell count, biomass dry weight, lipid content (Bligh & Dyer method), carbohydrates (Phenol-Sulfuric Acid method), and pigments. Statistical analysis utilizing One-way ANOVA and Duncan's Multiple Range Test ($p < 0.05$) revealed that MAP treatments generally enhanced biomass production and extended cell growth compared to the control. While MAP substitution showed no significant statistical effect on lipid productivity, it had a significant positive influence on carbohydrate and pigment synthesis. The study concludes that MAP is a viable nutrient source for *E. gracilis* biomass, cell growth, carbohydrate Chlorophyll a, Chlorophyll b, and carotenoid production.

Keywords: *Euglena gracilis*, Monoammonium Phosphate, Biomass, Carbohydrate, Pigments.