

ABSTRACT

Paramitha Prastyawati, 24020121140132, **Optimization of Mung Bean Sprouts Extract Dosage as Fertilizer to Support *Porphyridium cruentum* Growth.** Under the supervision of Riche Hariyati and Karyadi Baskoro.

Porphyridium cruentum is a potential microalgae widely used in industry due to its high bioactive compounds. Its potential drives high demand from various sectors for use as a raw material for products. Cultivation is carried out to meet biomass stocks for product production. Nutrition is a crucial parameter in the cultivation process, which can be met through fertilizer application. Walne fertilizer is one of the standard media for microalgae cultivation, but its relatively high price makes it an obstacle in large-scale production. Therefore, consideration is needed to switch to the use of more economical alternative fertilizers, one of which is mung bean sprout extract media. This study aims to determine the optimal dosage of mung bean sprout extract as a fertilizer for the growth of *Porphyridium cruentum* and its effect on biomass production. This study used an experimental method with three mung bean sprout extract dosage treatments (60 mL/L, 120 mL/L, 180 mL/L) and one control (walne 0.5 mL/L). The parameters observed included cell density and dry biomass. Data were analyzed using ANOVA at 95% confidence level. Biomass harvesting was carried out at the peak of the exponential phase. The results showed that the administration of bean sprout extract at different doses did not have a significant effect on the cell density or biomass of *Porphyridium cruentum* ($p > 0.05$). The control treatment produced the highest density and biomass of 5,104,167 cells/mL and 0.421 g/L, respectively, followed by the lowest dose of bean sprout extract treatment (60 mL/L), which produced a cell density of 4,577,500 cells/mL and a biomass weight of 0.405 g/L. Higher doses of mung bean sprout extract tended to decrease cell density and biomass. This indicates that optimal nutrition is better met in the Walne medium. This study shows that mung bean sprout extract media has potential as an alternative fertilizer, but further formulation is still needed so that its efficiency can match the standard media.

Keywords: *Microalgae, Porphyridium cruentum, Mung Bean Extract Media, Biomass.*