

**THE EFFECT OF FISH-BASED AMINO ACIDS ON THE GROWTH OF SUGARCANE  
SEEDLINGS (*Saccharum officinarum* L.) VARIETY BULU LAWANG**

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**ABSTRACT**

*Sugarcane is the primary commodity in Indonesia's sugar industry, as the country is among those with significant sugar production. National sugar production has shown an upward trend, with an average annual growth rate of approximately 3.5%, reaching 2.27 million metric tons in 2023. However, the productivity of sugarcane cultivated by farmers remains relatively low, preventing the national sugar industry from reaching its full competitive potential. One of the causes of this situation is the continuous and excessive use of inorganic fertilizers, which has the potential to degrade environmental quality. One approach to addressing this issue is the use of amino acids derived from lemur fish. These compounds are obtained through the hydrolysis of proteins into simpler forms, making them easier for plants to absorb and utilize in various metabolic processes. In addition, amino acids from lemur fish also contain essential nutrients, such as nitrogen (N), phosphorus (P), and potassium (K), which play a crucial role in plant growth. This study was conducted to examine the effect of applying amino acids derived from lemur fish on the growth of sugarcane (*Saccharum officinarum* L.) seedlings. The experiment was designed using a non-factorial Randomized Block Design (RBD) consisting of five treatments: P0 (without amino acids or SOP fertilizer), P1 at a concentration of 50 ml/L of water (5%), P2 at 100 ml/L of water (10%), P3 at 150 ml/L of water (15%), and P4 at 200 ml/L of water (20%). Each treatment was replicated five times, resulting in 25 experimental units. The observed variables included plant height, stem diameter, number of leaves, fresh weight, and number of tillers. The results showed that the application of lemur fish amino acids at a concentration of 100 ml/L of water, or 10% (P2), produced the best growth response in sugarcane seedlings. This treatment significantly increased stem diameter, the number of tillers, seedling height, and fresh root weight compared to the other treatments.*

**Keywords:** *Lemur Fish Amino Acids, Sugarcane Seedlings, Concentration*