THE EFFECT OF AMINO ACID ADMINISTRATION DERIVED FROM LEMURU FISH ON THE GROWTH OF ROBUSTA COFFE SEEDLINGS (*Coffea canephora* L.)

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ABSTRAK

The coffee industry is vital to Indonesia's economy, but it has seen a gradual decline in the acreage of both state and private large-scale plantations between 2020 and 2024. Climatic factors and the availability of nutrients, such as amino acids, significantly impact plant growth. Sardinella lemuru, abundant in Indonesia, is a potential source of protein and amino acids for fertilizer. Amino acids are crucial for biosynthesis, pest resistance, photosynthesis, and soil microbial activity. This research aims to evaluate the effect and optimal concentration of amino acid application on the growth of Robusta coffee seedlings. This study employed a non-factorial Randomized Block Design (RBD) with one factor: the concentration of Sardinella lemuru fish amino acid, consisting of 5 levels (0ml, 50ml, 100ml, 150ml, and 200 ml/liter of water). The research was conducted at the Seed Technology Laboratory Nursery of Politeknik Negeri Jember from September 2024 to January 2025. Parameters observed included plant height, stem diameter, number of leaves, fresh weight, and dry weight. Data were analyzed using ANOVA, and if significant, a Honestly Significant Difference (HSD) test was performed at a 5% significance level.The results showed that Sardinella lemuru fish amino acid application had a highly significant effect on plant height (P2 100 ml/L), stem diameter (P3 150 ml/L), and number of leaves (P3 150 ml/L) in 16-week-old Robusta coffee seedlings. However, there was no significant effect on the fresh and dry weight of the plants. The optimal concentration varied among the different vegetative growth parameters.

Keywords: *Amino Acid, Lemuru Fish, Coffee Plant*