EFFECTS OF FISH-BASED AMINO ACIDS LEMURU TO GROWTH COCOA SEEDS (*Theobroma cocoa* L.)

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ABSTRACT

Cocoa is a leading commodity that is exported to the international market. Cocoa bean production in Indonesia has decreased along with the decline in plantation area. The low productivity in cocoa production is largely due to poor conditions of care and maintenance of plantations and due to land conversion. It is necessary to increase the cultivation quality of cocoa nurseries. Excessive use of chemical fertilizers can damage the environment. An alternative that can be used is amino acids made from lemuru fish which are proteins that have been broken down into small molecules used for the biosynthesis process and contain Nitrogen (N), Phosphorus (P) and Potassium (K). This study aims to determine the effect of lemuru amino acids on the growth of cocoa seedlings (*Theobroma cacao* L.). The experimental design used in this study was (RAK) Non-Factorial with factors A0 = Control, A1 = 50 ml/liter of water (5%), A2 100 ml/liter of water (10%), and A3 150 ml/liter of water (15%) There were 4 treatments that were repeated 6 times so that there were 24 experimental units. The observation parameters in this study were plant height, number of leaves, stem diameter, wet weight, and dry weight. The results showed that the application of lemuru fish amino acids had an effect on the growth of cocoa seedlings in the parameters of plant height, stem diameter, number of leaves, wet weight of cocoa seedlings and dry weight of cocoa seedlings.

Keywords : Cocoa Plants, Lemuru Fish Amino Acids, Cocoa Nursery