

***THE EFFECT OF VARIOUS AMINO ACID CONCENTRATIONS ON THE
GROWTH OF VANILLA STEM CUTTINGS (VANILLA PLANIFOLIA
ANDREWS.)***

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ABSTRACT

Vanilla (*Vanilla planifolia* Andrews.) is a high-value plantation crop commonly propagated through stem cuttings. The success of cutting growth is influenced by several factors, including the application of amino acids as biostimulants. This study aimed to determine the effect of different concentrations of amino acids derived from lemuru fish on the growth of vanilla stem cuttings. The experiment was arranged using a Non-Factorial Randomized Block Design (RBD) with four treatments: A0 (control), A1 (2% amino acid), A2 (3% amino acid), and A3 (4% amino acid). The observed parameters included survival percentage, shoot length, root length, fresh weight, and dry weight at 180 days after planting. Data were analyzed using analysis of variance (ANOVA), followed by the Least Significant Difference (LSD) test at the 5% significance level for parameters showing significant effects. The results showed that amino acid application had a highly significant effect on fresh weight and a significant effect on the survival percentage of vanilla cuttings, but no significant effect on shoot length, root length, or dry weight. The control treatment (A0) produced the best overall growth, with a 79% survival rate, an average root length of 3.53 cm, better shoot growth, and a dry weight of 1.73 g. The 4% amino acid treatment produced the highest fresh weight (12.87 g), but the increase was likely associated with water accumulation due to physiological stress rather than enhanced plant growth.

Keywords: amino acids, sardinella, growth, stem cuttings, vanilla.