APPLICATION OF LIQUID ORGANIC COMBINATION AND ANORGANIC FERTILIZERS ON THE EFFECTIVENESS OF COCOA BREEDING AND TOTAL EFFICIENCY OF SEEDING COST (CASE STUDY OF INDONESIAN COFFEE AND COCOA RESEARCH INSTITUTE)

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ABSTRACT

Indonesian Coffee and Cocoa Research Institute (ICCRI) is a Government Organization which being a research center on coffee and cocoa commodities. Furthermore, ICCRI utilizes cocoa harvest to be processed into derivative products, which produce cocoa pod as a by-product. It was used as an organic fertilizer for cocoa plant seeds. ICCRI also use inorganic fertilizer to fulfill the nutritional needs of plants in addition to using organic fertilizer. The used of organic fertilizer will reduce the total cost of nurseries by combining with inorganic fertilizers. The study was aimed to find out the best treatment from the two fertilizer combinations applied to the cocoa seedling and the total nursery costs. This study was conducted by using Completely Randomized Design (CRD) with 2 factors, including the concentration level of liquid organic fertilizer (B) (0.00%; 0.25%; 0.50%; 1.00%), and the dose of inorganic fertilizer (P) (0%; 10%; 25%; 50%). The parameters used were plant height, stem diameter, number of leaves, dry weight and N content total. The results of this study were proven by hypothesis testing using the One-Way ANOVA Test and the Kruskal Wallis Test (Non-parametric). The results showed that the best treatment was B0P1 (0.00% POC & 10% gram of inorganic fertilizer), B2P1 (0.050% POC & 10% gram of inorganic fertilizer) and B1P2 (0.025% POC & 25% gram of inorganic fertilizer) with total costs respectively Rp 24,473,000; Rp 24,477,500; and Rp 24,922,250.

Keywords: cocoa seedlings, cocoa pod waste, liquid organic fertilizer and inorganic fertilizer.