THE EFFECT OF PLANTING MEDIA COMPOSITION AND NATURAL DEVELOPMENT ON ROOT AND SHOOTING GROWTH OF CACAO (Theobroma cacao L.*) STEM CUTTINGS USING PLAGIOTROPIC CLONAL COCOA (PCC) SULAWESI CLONE 01*

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ABSTRACT

One of the causes of low cocoa productivity is the age of the plant. One of the clonal cocoa propagation techniques is by using the cutting method from plagiotropic branches or Plagiotropic Clonal Cocoa (PCC). This study aims to determine the effect of the composition of the planting medium and natural PGR on the growth of roots and shoots of cocoa stem cuttings. The research activities were carried out from July to November 2025 at the Jember State Polytechnic Nursery. This study used a Factorial Split Plot Design. The composition of the planting medium consisted of M1 = sand, M2 = sand + topsoil and M3 = sand + topsoil + compost. Natural PGR with coconut water concentration consisted of 3 levels, namely A0 = without coconut water, A1 = 50% coconut water concentration and A2 = 100% coconut water concentration. There were 9 treatment combinations and repeated 3 times obtained 27 experimental units. The results showed that the planting medium treatment did not have an effect on all research parameters. This indicates that the planting medium already has good porosity, but in the initial growth of the roots did not grow optimally. The application of natural growth regulators (PGRs) affected root volume parameters, with the best treatment being without coconut water. The interaction and recommendation for growing media with natural PGRs was the sand and topsoil planting media treatment without coconut water (M2A0) on shoot number parameters at 120 days after planting. The availability of adequate food reserves and endogenous hormone content is sufficient to encourage the growth of cocoa stem cuttings.

***Keywords**: Cocoa, Plagiotropic Clonal Cocoa, Planting Media Composition, PGR*