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Determinants of Cocoa Production Using Side Grafting in Singa, Herlang District, Bulukumba Regency

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ABSTRACT

This study aims to analyze the determinants of cocoa productivity through side grafting technology in Singa Village, Herlang District, Bulukumba Regency. The research design is descriptive and quantitative, with primary data collection in March 2023. A total of 30 farmers implementing side grafting were selected and stratified based on land area and plant age. Independent variables include land area (ha), labor intensity (working days), fertilizer quantity (kg/ha), pesticide use (L/ha), plant age (years), and farmer technical skills (score). The dependent variable is cocoa yield (kg/ha). Data analysis used Cobb–Douglas regression in SPSS, equipped with goodness-of-fit (R^2), multicollinearity (VIF), simultaneous significance (F), and partial (t) tests. The model results explain 93.5% of the variation in yield ($R^2 = 0.935$; $p < 0.001$) with $VIF < 1.5$ in all variables. Land area was shown to have a significant positive effect on yield ($\beta = 1.013$; $t = 8.81$; $p < 0.001$), while labor, fertilizer, pesticide, plant age, and farmer skills did not show significant effects. These findings emphasize the importance of land management and expansion of planting areas to increase cocoa productivity in the side grafting system. Policy recommendations include providing additional land access, grafting technical training, and integrated nutrient and pest management.