THE EFFECT OF ADDING 2,4 DICHLOROPENOXY ACETIC ACID (2,4-D) AND COCONUT WATER ON THE INDUCTION OF ROBUSTA COFFEE CALLUS (COFFEA CENEPHORA L.) IN VITRO

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ABSTRACT

Robusta coffee (Coffea canephora L.) is one of the plantation crops with very high economic value, but the production yield of Robusta coffee is still below what could be achieved. This is because many Robusta coffee farmers use uncertified seeds. The technology for propagating Robusta coffee can be renewed with alternative tissue culture techniques. This study aims to determine the effect of adding growth regulators such as 2,4-D and natural growth regulators in the form of coconut water on the induction of Robusta coffee callus. This research was conducted in the tissue culture laboratory of Politeknik Negeri Jember from August 2024 to October 2024. This research uses a Completely Randomized Design (CRD) with 2 factors. The first factor is the concentration of 2,4-D (D) and the second factor is coconut water (N). The observation variables consist of the time of callus appearance (HSK), callus structure, percentage of explants forming callus, and fresh weight of callus (g). The research results show that the combination of treatment D1N1 (0.5% 2,4-D + 10% coconut water) and D2N2 (1% 2,4-D + 30% coconut water) showed a very significant difference in the time of callus emergence (HSK). Meanwhile, the various combinations of treatments did not have a significant effect on the fresh weight parameter of callus (gr). The combination of treatments can grow callus with the type of crumb callus. The percentage of explants forming callus was 93,33%

Keywords**:** *Robusta Coffea, Tissue Culture, 2,4-D, Coconut Water*