Response of Robusta Coffee *(Coffea canephora* Pierre ex A. Froehner*)* ***Callus Formation on Several Types of Tissue Culture Media Modification***

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ABSTRACT

Robusta coffee is cross-pollinated where the offspring has 2 different traits from its parent. To maintain the original nature of robusta coffee, breeding can be done by means of tissue culture techniques. Tissue culture technique is a breeding technique by isolating plant parts in sterile bottles to produce plants with the original nature of the parent. The use of modified tissue culture media can have an influence on callus growth. The purpose of this study was to determine the response of robusta coffee callus formation on several tissue culture media modifications to the parameters of callus growth percentage, callus growth time, callus color, callus type, callus perimeter area, and callus wet weight. This research was conducted from January to May 2023 at the Jember State Polytechnic Tissue Culture Laboratory. The main culture material used was young robusta coffee leaves. This study used a completely randomized design with 4 treatments (RO1 = MS0, RO2 = MS modified ½ NH_4NO_3, RO3 = MS modified vitamin B5, RO4 = ICP) where each treatment was repeated 5 times. The results showed that MS 0 media could not induce callus growth in robusta coffee clone explants. IKP media is the best media for color and type of robusta coffee callus. Media ½ MS modified vitamin B5 gives the best results on the time parameter of robusta coffee callus growth. MS media modified with ½ NH_4NO_3 showed the best results for callus perimeter and wet weight of robusta coffee callus.

Keywords*: callus, robusta coffee, tissue culture, tissue culture media*