THE EFFECT OF MEDIA AND CONCENTRATION OF 2,4 Dichlorophenoxyacetic Acid ON THE GROWTH OF PALM PALM EXCLANTS (Elaeis guineensis Jacq.) IN VITRO

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ABSTRACT

Oil palm plant (*Elaeis guineensis* Jacq.) belongs to the Arecaceae family and falls into the category of monocotyledonous plants. Currently, oil palm is a highly significant commodity as it is the plant with the highest oil yield compared to other oil-producing plants. The expanse of oil palm plantations in Indonesia is predominantly found in Sumatra, covering an area of 7,994,520 hectares, and Kalimantan, covering 5,820,406 hectares. During the period from 2010 to 2019, the export value of Indonesian palm oil in the form of Crude Palm Oil (CPO) and its derivatives experienced a considerable fluctuation, with an average annual decrease of 1.57%. In 2019, the total export of crude palm oil (CPO) and its derivatives reached 36.17 million tons. In light of these circumstances, efforts to address the declining productivity of oil palms include providing large-scale and rapid seedlings, as well as offering superior seedlings using tissue culture techniques. The objective of this research is to examine the influence of different media types and concentrations of 2,4-D (*Dichlorophenoxyacetic* Acid) on the in vitro growth of oil palm explants (Elaies Guineensis Jacq.). The study was conducted from October to January 2024 in the Tissue Culture Laboratory of the State Polytechnic of Jember. The research design employed a Factorial Completely Randomized Design (CRD) with two factors: Media (*Murashige And Skoog, Eeuwens* Y3) and Concentration of 2,4-D (*Dichlorophenoxyacetic* Acid) (0 ppm, 1 ppm, 2 ppm, 3 ppm). There were 8 treatment combinations with 3 replications, and each replication consisted of 2 experimental units. The research results indicate that the A1B3 treatment (MS Media + 2 ppm 2,4-D) represents the most effective combination for the appearance of callus.

Keywords : Palm Oil, 2,4-D, MS Media, Eeuwens Y3 Media