

Growth and development of oil palm shoots under different light qualities

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Abstrak

Light is one of the most important factor in plant tissue culture. The growth and development of plant in vitro are affected by light quality. This study examines the influence of different light qualities on the in vitro growth and development of oil palm shoots. Oil palm shoots were cultured in Murashige & Skoog medium under either white fluorescent lamp, white light-emitting diode (LED), red LED, blue LED, combination of red and blue LED, or in darkness. The results show that the growth and development of oil palm shoots are influenced by the light quality. Root initiation and shoot elongation were good under red light, while chlorophyll and sugar content was better produced under white and blue light than red light. In addition to white fluorescent lamp, the combination of red and blue LED resulted in higher growth parameter compared to other light treatments, but the results were not significantly different.