

EFFECTS OF COCONUT WATER ON CALLUS INDUCTION OF *Gyrinops walla* Gaetner ('WALLA PATTa')

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Agarwood oil obtained from a number of genera of the family Thymelaeaceae is an expensive product in the global market. *Gyrinops walla* is the only representative species of agarwood in Sri Lanka experiencing rapid declining due to over-exploitation and illicit felling. It has now become a threatened species which requires prompt conservation strategies and tissue culture is one of the alternative techniques for this. The effect of coconut water on callus induction was examined in the present study because coconut water is one of the most versatile natural products, commonly used as a growth enhancer in plant tissue culture/micropropagation. Modified Murashige and Skoog (MSM) and Woody Plant (WPM) media supplemented with 3% (w/v) sucrose, 0.25% (w/v) activated charcoal and gelled with 1% (w/v) agar were used with varying concentrations of coconut water (T1 – T10) to investigate the callus induction in *G. walla*. Fresh leaves were washed with Teepol and running water and cut into square-shaped pieces of 1 cm². Surface of the leaf pieces was sterilized with 70% alcohol for one minute and 5% NaOCl for 10 minutes under aseptic conditions. Explants were placed on culture media and incubated at 25 °C and 75%±10% relative humidity under dark condition. Weight of the callus was measured and callus induction percentage was calculated for a period of 60 days. Mean comparison (ANOVA and Tukey's Honest Test) was performed using SAS. Number of days taken to initiate callus was subjected to Z-test using SPSS. Though callus initiation was observed in all coconut water concentrations except control, the highest callus induction was noted in T6 in MSM (100 ml/l) and T10 in WPM (100 ml/l) with 41.5% and 38.3%, respectively. Comparatively, the highest concentration of coconut water in MSM (T6) showed higher rate of callus induction during 60 days of incubation of *G. walla* leaf explants.

Keywords: Agarwood, Callus, Coconut water, *Gyrinops walla* Gaetner, 'Walla Patta'

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