

In vitro embryo germination and callus induction of *Cynometra cauliflora*, an underutilized medicinal plant

Abstract

Cynometra cauliflora or known as 'Nam-Nam' is an underutilized medicinal plant of Malaysia. In this study, embryo from matured seed of *C. cauliflora* was cultured on the Murashige & Skoog medium containing 0.5 μM BAP. Embryo germination achieved up to 100% and produced an average of 8.8 ± 2.0 shoot buds per explant and 1.7 ± 1.5 leaves after eight weeks. Stem and shoot tips explants from in vitro plantlets were further treated with 5, 10 and 15 μM Thidiazuron (TDZ) for regeneration capacity. Stem explant responded 100% to callus induction after two weeks of culture on medium containing 10 μM and 15 μM TDZ. Meanwhile, shoot tip explant recorded only $12.11 \pm 0.54\%$ to callus induction after 6 weeks of culture on medium containing 5 μM TDZ. Stem explant remain at calli stages until the end of study, while shoot tips undergo shoot regeneration by inducing up to $54.45 \pm 9.27\%$ shoots production with an average of 3.00 ± 1.00 shoots per explant. Browning phenomenon was severely observed on the culture throughout this study. Therefore, the addition of activated charcoal to the culture medium will be beneficial to eliminate phenolics accumulation.