

## **Induction and multiplication of callus from endosperm of *Cycas revoluta***

### **Abstract**

The usage of medicinal plants in traditional medication has gained the attraction from global and local markets, mainly to cure diseases or simply for health maintenance. Callus cultures were initiated from the endosperm of the medicinal plant *Cycas revoluta*, cultured on half-strength Murashige and Skoog (MS) medium supplemented with 30 g/L sucrose and various concentrations (5, 10 and 20  $\mu\text{M}$ ) of 2,4-dichlorophenoxyacetic acid (2,4-D), 1-naphthalene acetic acid (NAA) and 4-amino-3,5,6-trichloropicolinic acid (picloram). Explants treated with various auxins formed calli with different morphologies. In the induction studies, 20  $\mu\text{M}$  picloram was the most efficient formulation for callus formation. The callus was formed after  $17.8 \pm 0.5$  days in the medium. However, callus was not formed in the control medium (MSO) and medium supplemented with 20  $\mu\text{M}$  2,4-D. Calli were successfully maintained in 10  $\mu\text{M}$  picloram at normal photoperiod (16 h light, 8 h dark). The calli treated with 10  $\mu\text{M}$  picloram that incubated in 24 h dark condition was found to exhibit less browning effects. Addition of 1 g/L polyvinylpyrrolidone (PVP) aided in overcoming the browning effects by absorbing the phenolic compounds in the medium. The combination of auxin (10  $\mu\text{M}$  picloram) and cytokinin (10  $\mu\text{M}$  kinetin) was able to multiply more friable and yellowish-green calli. © 2008 Academic Journals.