DEVELOPMENT OF EXPLANT STERILIZATION PROTOCOL FOR *IN-VITRO* PROPAGATION OF *Hydrocera triflora* (MARSH HENNA)

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ABSTRACT

Hydrocera triflora is a demanded, commercially valuable, perennial, ornamental aquatic plant, distributed within the *Indo-Malaysian* region and still not developed some *In-vitro* sterilization protocol for this species. This study was conducted to analyse the effect of surface sterilization treatments on *H. triflora* explants for development of *In-vitro* explant's surface sterilization protocol. Explants (shoot tip, node, and Internode) were cultured in full strength Murashige and Skooge (MS) medium, supplemented with 3% sucrose level and 3:1 BAP (6-Benzylaminopurine): NAA (Naphthalene Acetic Acid) concentration at 5.70 pH. Effect of pre-treatment sterilization with factorial combinations; 0.5% to 1.5% Sodium hypochlorite (NaOCl) (1 to 2 hours) with commercial detergent (Teepol) and Tween 20 disinfector were determined after 6 days. Effect of sterilization treatments with factorial combinations; 15% to 30% Sodium hypochlorite (NaOCl) (1 to 3 minutes), 70% Ethanol (30 s) on explant surface sterilization with pre-treatment for each explants were determined after 10 days. The best pre-treatment level is 1% of fungicide solution (Topsin) for *Hydrocera triflora* explants and there was no significant difference between 1% fungicide solution for 01 hour and 02 hour. Lowest mean value of contamination explants was given by the 1% fungicide solution (2 hour). In 20% to 30% NaOCl with 70% Ethanol (pre-treated) indicated that there was no significant difference with the number of contaminants and the treatments for all explant types. All the explant types in this treatment were destroyed by bleaching effects. In 15% to 20% NaOCl with 70% Ethanol (pre-treated) indicated that there was a significant difference between treatments ($p<0.05$) for the average number of contaminants (fungal infection). Lowest average number of contaminants for shoot tips (1.72 ±1.5161), nodes (2.32±1.0261) and internodes (2.11±1.0436) represented the best treatment for explant sterilization, which was provided by 18%, 19% and 18% NaOCl and 70% Ethanol (pre-treated) respectively. The most effective explant sterilization protocol (pre-treatment, 18-19% NaOCl and 70% Ethanol) developed from this study can achieve the highest number of healthy explants for *In-vitro* propagation of *Hydrocera triflora.*