

**STUDY ON IMPACTS OF SUBSTRATES AND
SHADE ON OPTIMUM GROWTH OF MICRO-
PROPAGATED *Cryptocoryne wendtii*.**

This student belongs to
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ABSTRACT

In the ornamental aquatic plant industry of Sri Lanka *Cryptocoryne wendtii* which belongs to the Araceae family hold an important place. Micro-propagation is used as a method for large scale multiplication of this plant. However, transferring of micro-propagated plants to the outer environment is challenging and needs best hardening substrate to achieve optimum growth. Therefore, this study focused in determining the best hardening substrate and shade condition. Eight weeks old 45 plants of in-vitro rooted plants were hardened using three different substrates; coir fiber (A) , clay pebbles (B),stone wools (C) and three different shades; without shade (1) , 80% shade (2) , 60% shade (3) for two months. Three replicates were used under A (1,2,3) , B (1,2,3) , C (1,2,3) . Growth performances of plants in each substratum under shades were measured by using growth rates; stem length (S), root length (R), number of leaves (L) of each plant in each substrate and shade. Collected data were subjected to SPSS analysis at $p < 0.05$. According to the results, between substrates, shade (fixed factors) and (S,R,and L) were significantly affecting on the growth performance of *C.wendtii*. p values among fixed factors are $S=0.001$, $R=0.017$ and $L=0.015$. Mean values; stem length are; SA1 (10.47cm \pm .1401) , SA2 (9.78cm \pm .1401) , SA3 (9.805cm \pm .1401) , SB1 (9.74cm \pm .1401) , SB2 (9.72cm \pm .1401) , SB3 (10.54cm \pm .1401) , SC1 (10.28cm \pm .1401) , SC2 (10.105cm \pm .1401) , SC3 (10.33cm \pm .1401) , and mean value of numbers of leaves are; LA1 (10.5 \pm .163) , LA2 (9.8 \pm .163) , LA3 (9.9 \pm .163) , LB1 (9.7 \pm .163) , LB2 (9.8 \pm .163) , LB3 (10.5 \pm .163) , LC1 (10.3 \pm .163) , LC2 (10.1 \pm .163) , LC3 (10.3 \pm .163) , mean values of root length are; RA1 (3.45cm \pm .163) , RA2 (2.8cm \pm .163) , RA3 (2.9cm \pm .163) , RB1 (2.7cm \pm .163) , RB2 (2.8cm \pm .163) , RB3 (3.5cm \pm .163) , RC1 (3.3cm \pm .163) , RC2 (3.1cm \pm .163) , RC3 (3.2cm \pm .163) . The mean values of highest S,L,R was recorded by stone wool (C) .The results of this study are important to achieve best growth performance of micro-propagated *C.wendtii* plants for ornamental aquatic plant industry.