Investigation of an effective rooting procedure for *Dracaena godseffiana*

G.R.A.S.Bandara[1], H. K. L. K. Gunasekera[1*] and W.M.H.L.D.Weerakoon[2]

1 Department of Agricultural and Plantation Engineering, Faculty of Engineering Technology, The Open University of Sri Lanka

2 Mike Flora International (PVT) Ltd, Rambukkana

ABSTRACT

Dracaena godseffiana is an excellent ornamental plant commercially propagated by stem cuttings. But during propagation these species are not been success due to poor rooting and yellowing of leaves in rooted cuttings. Hence present study was aimed to find out a high-productive rooting procedure in order to make propagation feasible and economical. The experiment was arranged as two – factor factorial with Completely Randomized Design (CRD) combined with three treatments randomized in ten replicates. Treatment structure consisted of three concentrations of IBA, i.e. 0.00025g IBA/1g talk (T1), 0.005g IBA/1g talk (T2) and 0.002g IBA/1g talk (T3) as well as with three maturity stages of *Dracaena godseffiana surculosa* stem cuttings (20-25 cm long), i.e. tender, semi hard wood and hard wood which were randomly assigned for each treatment combination. Different concentrations of IBA were applied to the cut end of the each stem cutting. Each cutting was potted in the oasis (floral foam) media and placed them on a sand bed inside the propagation house under 80% shade condition. A set of non IBA applied cuttings (T4) was maintained as a control of the experiment. Measurements were taken on time required for first root initiation, number of roots, root length and number of shedding leaves after 21 days after propagation. The data obtained were tabulated and analysed subjected to the Analysis of Variance (ANOVA) procedure of Statistical Analysis System (SAS). Duncan's New Multiple Range Test (DNMRT) was performed to compare the differences among treatment means at $p=0.05$. Significantly highest number of roots was manifested from hard wood cuttings which were treated with 0.002g/1g IBA (T3) whilst the lowest recorded from non IBA applied treatment (T4). On the other hand there was a significant difference ($p<0.05$) among different cutting types tested and significantly higher number of lengthy roots were observed from the plants propagated from hard wood cuttings. However, the cuttings treated with different concentrations of IBA did not show any significant difference during the study period. Number of shedding leaves did not show any significant difference ($p>0.05$) among different treatments as well as cutting types tested in the experiment. However, lower number of shedding leaves were observed from plants propagated with hard wood cuttings. Furthermore, hard wood cuttings treated with 0.002g IBA/1g talk (T3) took shortest time (days) for first root initiation whilst the tender cuttings took more number of days to initiate first root. Hence hard wood cuttings treated with 0.002g IBA/1g talk (S.O.I. Secto) can be considered as the most effective treatment combination to propagate *Dracaena godseffiana surculosa* in commercial scale.

Key words: *Dracaena godseffiana surculosa,* IBA, stem cuttings, rooting, propagation

1 Corresponding Author: hkgun@ou.ac.lk)*