EFFECTS OF CUTTING TYPES, MEDIA AND HORMONE (BAP) APPLICATION ON THE GROWTH AND DEVELOPMENT OF *Hydrocera triflora* L.

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ABSTRACT

A study was carried out to determine the effects of different type of cuttings, different media and different concentrations of hormone (BAP) application on the growth and development of *Hydrocera triflora* L. from January to April 2019.

The experiment one was arranged in a split plot design with completely randomized design (CRD) and there were two main factors and three sub factors with twelve replicates. Different media (S1-solid and S2-liquid) were arranged in the main plots while different types of cuttings (W1-softwood, W2-semi-hardwood and W3-hardwood) were distributed among the sub-plots. Agronomic practices were followed uniformly for all treatments. Growth parameters viz. plant height, number of new leaves, number of roots and root length were measured at one week interval from two weeks after planting following destructive sampling method. Analysis of variance was performed to determine the effect of treatments on measured parameters and treatment means were separated by Duncan's Multiple Range Test ($p < 0.05$). Results revealed that softwood cuttings grown in liquid media performed better in the measured growth parameters. Their growth rate is also higher. Therefore it could be stated that, softwood cuttings and liquid media are ideal for the propagation of *H. triflora*.

The experimental two was arranged in completely randomized design (CRD) with four treatments and twelve replicates. Following treatments were imposed: A1-Albert solution, A2- Pond water, A3- Chlorinated water, A4- Distilled water (control). Agronomic practices were followed uniformly for all treatments. Growth parameters viz. plant height, number of roots, fresh weight were measured at one week interval from two weeks after planting following non-destructive sampling

method. Analysis of variance was performed to determine the effect of treatments on measured parameters and treatment means were separated by Duncan's Multiple Range Test ($p < 0.05$). Results divulged that the plants grown in distilled water showed better performances in all measured parameter than other liquid media. Lowest performance was observed in chlorinated water. Therefore it could be concluded that distilled water is suitable media for the propagation of *H. triflora*.

The experimental three was arranged in a completely randomized design (CRD) with five treatment and ten replicates. Five treatments were defined viz. T1 (25mg/l BAP), T2 (50mg/l BAP), T3 (75mg/l BAP), T4 (100mg/l BAP), T5 (Control). Application of hormone was carried out twice as foliar spray while the control was sprayed with distilled water. First hormone application was practiced one month after the plant establishment..Second application was done seven days after the first application. Agronomic practices were followed uniformly for all treatments. Growth parameters viz. Plant height, number of leaves, number of shoots and chlorophyll content were measured at one week interval from 1 week after 2nd hormone application following non-destructive sampling method. Analysis of variance was performed to determine the effect of treatments on measured parameters and treatment means were separated by Duncan's Multiple Range Test ($p < 0.05$). Results of the experiment disclosed that plants received lowest BAP (25mg/l BAP) application showed better performances in measured parameters. Further plant growth performances decreased with increasing level of BAP concentration. Therefore application of 25 mg/l BAP is optimum for *H. triflora* to increase the growth performances.

Keywords: Growth parameters, Hormone, *Hydrocera triflora* L., Media, Softwood.

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