

Effect of *Sargassum wightii* (Seaweed) Extract on *In-vitro* Sub-Culture Medium of *Dendrobium* Orchid

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Dendrobium is one of the most beautiful orchid varieties having high demand as a cut flower as well as a potted plant. Large scale commercial production is possible only through vegetative propagation such as tissue culture. High cost of production is a major drawback of tissue culture which involves higher expenses for chemicals. This study focused on identification of bio-stimulatory effects of a seaweed (*Sargassum wightii*) extract on *in-vitro* sub culture medium of *Dendrobium* for quality plantlet production. Two experiments were carried out with 20 treatments in 10 replicates where, MS (Murashige and Skoog) basal medium with BAP (6-Benzyl Amino Purine) and without BAP were used for experiment one. For experiment two KnC (*Knudson C*) basal medium was used with coconut water, banana pulp and without coconut water, banana pulp. Treatments were prepared with combination of seaweed extract of 5%, 10%, 25% and 40% concentrations for above basal media. MS medium with BAP and KnC medium with coconut water, banana pulp without adding seaweed extract were used as control. Plantlets in MS medium with BAP and 10% seaweed extract showed significantly higher ($p<0.05$) plant height, number of shoots, number of leaves and dark green color leaves whereas higher number of roots were recorded in MS medium without BAP but with 10% seaweed extract compared to the control. Plantlets in KnC medium supplemented with coconut water, banana pulp and 10% seaweed extract showed significantly higher ($p<0.05$) plant height, number of shoots, number of leaves, number of roots and dark green color leaves compared to the control. Comparatively, MS medium with BAP and 10% seaweed extract showed good performance, which is suitable for commercial plant production.

Keywords: *Dendrobium* Orchid, KnC medium, MS medium, Seaweed extract