

**DEVELOPMENT OF A SUITABLE
MICROPROPAGATION PROTOCOL
FOR HYBRID LIMONIUM**

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ABSTRACT

Series of experiments were carried out to identify suitable protocols for direct and indirect organogenesis. For direct organogenesis the nodal cuttings of immature inflorescence were used while internodal cuttings of inflorescence and immature leaves were used for indirect organogenesis. Nodal segments of inflorescence, when cultured on MS (Murashige & Skoog, 1962) medium supplemented with 1 mg l^{-1} BAP and 0.1 mg l^{-1} NAA produced significantly higher number (3.4/explants) of longer shoots (1.92cm) six weeks after culture establishment.

In the experiment on indirect organogenesis using explants of leaf and internodal cuttings, the latter showed callusing but leaf cuttings responded poorly. Fascinatingly, the internodal segments produced direct shoots. Among the tested media, MS+ 2 mg l^{-1} 2,4-D + 1 mg l^{-1} IAA+ 1 mg l^{-1} Kinetin produced calli and direct shoots (4.27 nos./explant) from 84 % and 80 % of the total number of explants respectively. However, the calli could not be regenerated on MS media used in the present experiment. During multiplication, significantly higher number of shoots (10.07) was proliferated with the shoots regenerated from nodal cuttings and cultured on MS medium supplemented with 2 mg l^{-1} BAP and 0.4 mg l^{-1} GA₃. Further, the addition of GA₃ at 0.4 mg l^{-1} into the multiplication medium, along with 2 mg l^{-1} BAP increased the height of the shoots significantly.

Results of *in-vitro* rooting study suggested that the addition of activated charcoal along with 1 mg l^{-1} IBA favors on the percentage of rooted plants, the length of the longest root and plant fresh weight. However, no. of roots was negatively affected by charcoal.

Coir dust: sand (3:1) medium found to be suitable than the medium only with the sand for acclimation of the *in-vitro* plantlets as it supported the growth of the plants in terms of plant height.

The results obtained from the present study suggest that the Limonium is an amenable crop for direct shoot proliferation which is very useful for commercial scale micropropagation.