Homoeopathic Silicea a Novel Elicitor to Enhance Secondary Metabolite Production in Micro-propagation of Psoralea Corylifolia

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Abstract

Background and Objectives : *Psoralea corylifolia* Linn., an endangered medicinal plant with bioactive compounds, faces propagation challenges due to low rates of seedling emergence and high mortality of seedlings. This study aims to address these challenges using *in vitro* techniques and explores the use of homoeopathic *Silicea* to enhance secondary metabolite production, combining modern micropropagation and agrohomoeopathy for sustainable therapeutic potential.
Methods: Homoeopathic medicine *Silicea* in various potencies (6CH, 12CH, 30CH, 200CH, 1M) was evaluated for its effectiveness in enhancing the production of secondary metabolites during the micropropagation of *Psoralea corylifolia*. The percentage of callus induction and the quantity of psoralen were determined and compared with positive controls, which included Auxin/Cytokinin treatment groups with different 2,4-D concentrations alone, and in combination with BAP or KN.
Results: Homoeopathic medicine *Silicea* in different potencies (6CH, 12CH, 30CH, 200CH, 1M) were screened and found that the average % of callus induction tends to increase with the potency of *Silicea*. The highest average % of callus induction is observed for 1M and 200CH potency *Silicea*, while the lowest is seen for 6CH, 12 CH, and 30CH *Silicea*. The highest average psoralen quantity area was observed for 1M, but it was not statistically significantly different from 200CH and 30CH potency.
Conclusion: Increasing the potency of *Silicea* from 6CH to 1M leads to a significant increase in the average psoralen quantity area. Hence, we can conclude that the homoeopathy medicine *Silicea* has the potential to increase the average psoralen quantity area.
Keywords: Callus induction, Homoeopathy, Micropropogation, Plant tissue culture, *Psoralea corylifolia* L., Psoralen Quantity, Secondary metabolite, *Silicea*.