**Abstract**

*Simarouba glauca* belongs to the family of Simaroubaceae. It is a medium sized evergreen tree and medicinally important plant. *Simarouba glauca* oil seed is used as an alternative energy to replace fossil fuel. The chemical constituents of *Simarouba*are used as antiprotozoal, anti-amebic, antimalarial and it is even toxic to cancer and leukemia cells. In this study, an efficient and improved micro propagation protocol will be developed by the optimization of culture condition using MS medium. Micro-propagation is an effective protocol which gives rapid multiplication in a shoot cycle and it results in increased number of seedlings*.* The advantage of *In vitro* propagation is production of pathogen free elite cultivars. In this context the pathogen free plants of their genotype and subsequent phenotypes will be improved by introducing the desired gene through molecular cloning. Since, the time duration taken for the growth of tree is more than 10 years, it could be reduced through genetic engineering by introducing genetically modified elite cultivar. Hence, the present research programme will be a promising initiative for the future development of economically important bio resources. Agrobacterium mediated transformation system is an efficient, harmless, ecofriendly with high transformation efficiency than the other gene delivery system.