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A PROJECT REPORT ON "PROTOCOL FOR RAPID PROPAGATION OF DIOSCOREA RACEMOSA"

A KSCST FUNDED PROJECT-2009

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INTRODUCTION

Karnataka state is endowed with rich natural resources especially along the Western Ghat ranges. The Western Ghats range arises abruptly in the west from the Arabian Sea coast and descends gradually towards the dry Deccan plains in the east. The total area of the Western Ghat is estimated to be about 20,000 sq.kms. The good climatic conditions and altitudinal gradients have resulted in the development of a variety of forests from evergreen to semi evergreen, moist deciduous to dry deciduous and scrub jungles. It is one of the richest biodiversity centers and is considered as one among the eighteenth hot spot of the world. This region comprises about 4000 species of angiosperms of which 2,280 species are endemic to this region (Pascal, 1982).

Plant tissue culture offers quick and efficient methods to exploit medicinal plants meaningfully to meet the measuring demands of the pharmaceutical industries and reduce *in situ* harvesting pressure from natural forest resources. Tissue culture technology can be used to get more medicinal components without destroying the natural plants. Considering the high economical and pharmacological importance of secondary metabolites, industries are deeply interested in utilising plant tissue culture technology for large scale production of these substances. By using this technique many medicinal plant parts are cultured to obtain enhanced production of secondary metabolites. The investigation of Arellano, *et. al.*, (1996) have proved that the root callus culture of *Perezia cuernavacona* was used as an alternative for enhanced production of sesquiterpenes, quinones and perezone. Similarly in *Catharanthus roseus* tumor suspension culture, addition of acetyl salicylic acid acts as a new biotic factor in the enhanced production of total alkaloids, phenols and anthocyanins (Bhalsing and Maheshwar, 1998). Tissue

culture of natural materials is not expensive compared to the synthetic production of various commercial substances or pharmaceuticals. (Fujita, 1990).

In the present investigation two indigenous medicinal plant species namely *Dioscorea racemosa* was selelcted to explore its morphogenic potentialities under *in vitro* condition.

Dioscorea bulbifera:- L.Sp. Pl. 1033. 1753; Gamble, Fl. Madras 1511 (1055). 1928; Weight. Ic.t. 878. 1844; Prain and Burkill, Ann. Roy. Bot. Gard. (Calcutta(14 (1) 188; t-77. 1936.

Stem twning to left. Bulbils common in leaf axils. Leaves shallowly cordate, to 15x12 cm, to 11-ribbed. Petiole to 8 cm. Malespikes in slender axillary panicles. Perianth lobes linear. Stamens 6- Female Spikes 1-3 together, about 35 cm long; staminodes 6-Capsule quadrately oblong seeds winged only at base. It is distributed in India, Sri lanka. Fairly common in wet deciduous to semi evergreen forests. Sep-Dec. cfs 11404, 15045. Often cultivated for edible tubers.

The plant is known as varahee (sansicrit), Poterto yam (English) heggenasu [Kannada]. The plant is used traditonally as aphrodisiac, rejuvenator, in treating bone facture, cardiac diseases, diarrhoea, desertry, jeaver, Jandies, Piler, Polyvrea, Ulcers urinary caliculli, in expelling worms (Keshawamurthi 1994). The plant is also known for its diaretic, antinflanetory activity. It is one of the major Indian medicinal plant. Used in 3 indegesous systems of medicine [Pullaiah 2002]. in treating syphilis, The plant contains poisonous glucoside. (Chopra, et al., 1956).