A STUDY OF ENDANGERED MEDICINAL PLANT EUPHORBIA FUSIFORMIS BUCH-HAM EX D. DON: A REVIEW

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ABSTRACT

From time immemorial humans had been using plants as healers and treatments for various ailments. Through ages this knowledge had been passed on from generations to generations as a common heritage. Ethno-medicines had been an integral part of Indian culture; however the modernization had set back this knowledge to the remote and backward populations only. The continuous pressure of urbanization, loss of agriculture and forest lands and increasing population had all lead to the destruction of floral biodiversity in addition to posing threat of extinction to many plants of medicinal importance. One of many such endangered plants species of Chhattisgarh state is \textit{Euphorbia fusiformis} Buch-Ham ex. D. Don. (Chhattisgarh Vanaushadhi Board, 2014). Present review aims to explore the potential of this endangered species and methods for its conservation.

Key Words: Ethno-medicines, Urbanization, Floral Biodiversity

\textit{Euphorbia fusiformis} Buch-Ham ex. D. Don is a rare geophytic, succulent herb of family Euphorbiaceae. It is also known as Dudhi, Dudhmul, Chirkandicha Kand etc. Morphologically it is glabrous herb with its stem reduced to root stock which is stout, cylindrical and sometimes fusiform with milky latex. Its leaves are elliptical and few in number (Rahman et. al., 2012). It is distributed over Eastern Ghats, West Bengal, Tamil Nadu, Rajasthan, Chhattisgarh and Madhya Pradesh. The plant is of great medicinal importance and is used traditionally to treat liver disorders.

Medicinal value of \textit{E. fusiformis}

It is the great medicinal importance of \textit{E. fusiformis} that has lead to its over exploitation up to the verge of its extinction. It is useful in treatment of rheumatism, paralysis, gout, arthritis, stomach disorders, stomach tumours, head ache, diarrhoea, chronic wound cracks, skin diseases and eczema (Rahman et. al., 2012), conjunctivitis (Bhosle et. al., 2009). Anti-bacterial (Natrajan et. al., 2005), hepatoprotective (Anusuyan et. al., 2010), diuretic (Ashok et. al., 2011a), antinoicceptive (Ashok et. al., 2011b), galactagogue (Dandotiya et. al., 2013, Rahman et. al., 2012), intestinal motility enhancer (Ashok et. al., 2012) etc.

Phytochemicals Composition

The preliminary phytochemical screening of \textit{E. fusiformis} as carried out by Ashok \textit{et. al.} (2011c) indicated the presence of carbohydrates, starch, flavanoids and steroids, also some common phytoconstituents as common dots were detected by using different solvent systems in thin layer chromatography.

Conservation strategies

Due to its remarkable medical importance, \textit{E. fusiformis} remains in great demand among the ethno-medical healers. Since its tuber is used as medicine, collectors uproot the whole plant, thus destroying it completely. It is on account of this indiscriminate exploitation and negligence towards its conservation has lead it to the verge of extinction. In April 2011, the Convention of International trade in endangered species of wild fauna and flora, enlisted \textit{E. fusiformis} in the category of plants with little risk due to trade, only to be traded as artificially propagated specimens. However, no attention had been given to artificial propagation of this plant. As a result, today it is enlisted as the endangered taxa of the state of Chhattisgarh by the Chhattisgarh Vanaushadhi Board, Government of Chhattisgarh.

Among many conservation strategies, the best suited for conservation of this plant is its micropropagation through organogenesis.

Organogenesis refers to development of root or shoot or both from an undifferentiated callus or meristematic cells of any origin. Organogenesis may or may not involve callus formation. Organs like root or shoot are directly induced from the explants by supplementing suitable hormone
concentration in the culture media. Different species respond variably to the amount concentrations, however, the hormone combinations for organogenesis are well defined for many plant species (Singh B.D., 2006). Micro propagated plantlets are acclimatized in green houses, after which they are ready to be planted in the fields. The plants grown in this way are as good as those found in natural habitat. Unfortunately, no significant work had been done in this approach for E. fusiformis.

CONCLUSION
Like most of the plants of economic and medical importance, E. fusiformis is suffering the threat of extinction, due to constant exploitation and negligence in its conservation. It needs to be conserved along with its natural habitat. As due to overgrowing population and urbanization the forest lands of the country are shrinking. So as an alternative to the in-situ conservation, ex-situ conservation approaches will be more beneficial, both to overcome the shortage in supply and in restoring the normal population of this species in nature.

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