Research Article

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ETHNOMEDICINAL SURVEY OF THREATENED PLANTS IN PACHAMALAI HILLS, TIRUCHIRAPPALLI DISTRICT, TAMILNADU, INDIA

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ABSTRACT

Anthropogenic interactions shape the biodiversity of the terrestrial ecosystems. If the human needs are given due orientation, they can be made in to a conservation effort, for the sustained use of biological resources. A study was carried out to know the relations between the threatened flora and the indigenous community. The eastern ghats of Tamilnadu was surveyed in three districts with reference to the ethno botanical perspective giving due emphasis on the threatened plant species. The present study reveals the reason for the conservation status of certain medicinal plants as well as new avenues for management of these threatened plants.

Keywords: Ethnobotany, Ethnomedicine, pachamalai hills, RET species.

INTRODUCTION

The knowledge about medicinal plants accumulates among the indigenous communities during the course of many centuries based on different medicinal systems such as Ayurveda, Unani and siddha. In India, it is reported that traditional healers use 2500 plant species of 100 species of plants as regular source of medicine¹. The traditional medicinal practices exist in the form of primary health care system in the developing countries². There are 400 different tribal and other ethnic group in India constituting about 7.5% of the population^{3,4}. During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use and there are many reports on the use of plants in traditional healing by tribal people and indigenous communities⁵⁻⁹. The Eastern Ghats is a long stretch of hill covering three states viz., Orissa, Andrapradesh and Tamilnadu. This ghat is spanning in three districts of Tamilnadu. Among Salem, Perambalur and Tiruchirappalli, the third one is having the major portion of the area. The Eastern Ghats is reported to harbor highly regarded vegetations with more valuable medicinal plants. There is general checklist available in this region of Eastern Ghats but reports on the ethnic interaction on this threatened flora is lacking. The present study covered an area of Tiruchirappalli district. A survey for four years to enumerate the seed plants (Angiosperms and Gymnosperms) resulted in a total of 812 plants. Almost all the plants were found to be directly used by the ethnic community of pachamalai. Interestingly, not only common plants but also a countable number of species of medicinal plants which are threatened and endangered are rigorously used by them. This paper reports the importance of the consideration of conservation status for ethno botanical studies.

MATERIALS AND METHODOLOGY

The study area in the pachamalai hills, located in Tiruchirappalli District, Tamil Nadu, India, situated 2000 to 3000 feet above mean sea level, lying between 78° 31' East and 11° 28' North and 11° 10' south and 78° 20' west latitude. Ethnobotanical data were collected according to Mitalaya *et al*¹⁰. A total of 16 reserved forests were covered. Every visit was made to probe the general public as well as traditional medicinal practitioners called "Nattuvaidhyar."

The plant specimens were collected in a non destructive manner. The tough-to-identify specimens alone were made into herbarium for the identification. The specimens were referred in Rapinaut Herbarium, Tiruchirappalli. The identification keys from floras^{11, 12} were followed. The threatened status of the plants was confirmed with IUCN Red list and also using available literature¹³. The botanical information was made into a database consisting of binomial, family, local vernacular name, habit, source of collection, morphology of useful part and the conservation status.

RESULTS AND DISCUSSION

The survey results showed a countable number of fifteen species belonging to fifteen different families (Table 1). These 15 species were found to be used to cure twenty diseases in local health traditions such as asthma, ulcers, diarrhea, indigestion, Hemorrhage, stomach troubles, skin diseases, heart diseases etc., these medicinal plants are utilized as whole or their parts in the form of paste, extract, powder and decoction¹⁴. Tribal population has good knowledge about the use of many plants¹⁵. Traditional healers, use their eyes, ear, nose and hands to diagnose the diseases, this way of diagnosis is exclusive because they live in their areas and lack modern scientific equipment for treatment they however treat diseases using medicinal plants¹⁶.

Table 1: Threatened plants used in ethno medicines

SN	Species name	Family	Local name	Habit	Source of collection	Parts used	Medicinal uses	IUCN Status
1.	<i>Acorus calamus</i> L.	Araceae	Vasambu	Herb	Semi aquatic wetland	Rhizome and root,	Indigestion	VU
2.	<i>Aegle marmelos</i> (L.) Correa ex Schultz.	Rutaceae	Vilvam	Tree	Deciduous forest	Rhizome, Flower, Bark, Flower, Leaf	Diarrhea	VU
3.	<i>Cayratia pedata</i> (Lam.) Juss ex Gagnep.	Vitaceae	Kattupirandai	Climber	Semi Evergreen to evergreen	Flower and stem	Asthma	CR
4.	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Vaaluluvai	Liana	Dry deciduous to Semi ever green	Stem and flower	Drowsiness	VU
5.	<i>Cycas circinalis</i> L.	Cycadaceae	Matanakamam	Tree	Dry to semi evergreen	Cone	Snake poison	CR
6.	<i>Decalepis hamiltonii</i> W & A	Asclepiadaceae	Mahalikizhangu	Climber	Moist deciduous	Rhizome, Root	Health tonic	EN
7.	<i>Gloriosa superba</i> L.	Liliaceae	Kalappaikilangu	Climber	Semi ever green	Tuber	Arthritis	NT
8.	<i>Hildegardia populifolia</i> (Urb.) Schott & Endl	Sterculiaceae	Malaipoovarasu	Tree	Evergreen	Bark	Dog bite	CR
9.	<i>Madhuca longifolia</i> (Koen) Macbr	Sapotaceae	Iluppai	Tree	Dry ever green	Flower, Stem	Hemorrhage	EN
10.	<i>Moringa concanensis</i> Nimmo ex Dalz & Gibson	Moringaceae	Kattumurungai	Tree	Dry evergreen	Bark, leaf, flower	Liver & Spleen diseases	VU
11.	<i>Piper nigrum</i> L.	Piperaceae	Melagu	Climber	Moist deciduous	Flower, Stem	Abdominal ulcers	VU
12.	<i>Pseudarthria viscida</i> W & A	Fabaceae	Muvilai	Shrub	Moist deciduous	Root	Rheumatism	NT
13.	<i>Santalum album</i> L.	Santalaceae	Santhanam	Tree	Scrub to dry evergreen	Whole plant	Skin diseases	EN
14.	<i>Smilax zeylanica</i> L.	Smilacaceae (Liliaceae)	Kattukodi	Climber	Deciduous	Rhizome	Venereal diseases	VU
15.	<i>Terminalia arjuna</i> (Roxb.) ex DC. W & A	Combretaceae	Maruthamaram	Tree	Deciduous.	Bark, Leaf and flower	Heart diseases & Skin diseases	LRNT

PLATE - I

1. *Aegle marmelos* (L.) Corr., 2. *Cayratia pedata* var. *glabra*, 3. *Celastrus paniculatus* Willd., 4. *Gloriosa superba* L., 5. *Hildegardia populifolia* (Roxb.) Schott. & Endl.

PLATE - II

6. *Madhuca longifolia* (J. Koenig ex L.) Macbr., 7. *Moringa concanensis* Nimmo ex., 8. *Pseudarthria viscida* (L.) Wight & Arn., 9. *Santalum album* L., 10. *Terminalia arjuna* L. flowering and fruiting.

The habit-wise classification resulted in only one herb, seven trees, six climbers and one shrub. The families Aeraceae, Santalaceae, and Combretaceae were mostly used. The Santalaceae and Combretaceae were used to treat skin disease and Aeraceae members were used to treat indigestion in children. The diarrhea caused by spicy food habit, lead to the persistent consumption of *Aegles marmelos* fruit. To tackle the poisonous insect bites *Cycas circinalis* leaves extract is externally applied. The availability of medicinal plants in vicinity makes the medicinal plant 'know how' for a plant that later turns the plant to the present conservation status. Among the 15 species of conservation 6 were vulnerable (VU), 3 were critically endangered (CR), 3 were endangered (EN), 2 were near threatened (NT) and 1 was least near threatened. The continuous usage of these plants counted has been one reason for their conservation status. On the other hand the well maintained tradition of knowing the uses of these plants paves the new way to conserve, manage and utilize this treasure of nature.

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