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**DOCUMENTATION OF MEDICINAL PLANTS KNOWLEDGE OF
NAGAMALAI HILLS, MADURAI DISTRICT, TAMIL NADU, INDIA**



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Short Profile

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ABSTRACT:

The traditional knowledge of people including reliable ethnomedicinal expertise preparation of drugs and administration were documented. The 70 days during June 2014 - feb 2015. Rare medicinal plants survey was carried out to collect the information about the medicinal plants found in Nagamalai Hill and used by the native of around the hills people. 74 plants species belongs to 34 families, which are used in traditional health care system are information obtained from the in and a

round the Nagamalai hills people, the documented the local people are arranged alphabetically, and followed by their botanical name, family name, vernacular names parts used and their corresponding diseases. The traditional system of health care has been systematically used for over two thousand years to treat illness. The local Nagamalai people depend on plants and their parts, to cure their health problems. To avoid biodiversity extinction some measures would taken, like cultivation of rare medicinal plants, establishment of herbal gardens in forest areas and creation of seed bank. People should be expectant to raise medicinal plants cultivate and sustainable utilization and medicinal gardens in their vicinity to ensure conservation of the biodiversity in medicinal plants.

KEYWORDS

Medicinal plants, Nagamalai Hills, Madurai District.

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1. INTRODUCTION :

According to the WHO, over 80% of the world population relies on traditional forms of medicine, largely plant based to meet primary health care needs (de silva,1997;Mukarjee and Wahil,2006). . In India has the second tribal population in world. The indigenous system of medicine practiced in India is based mainly on the use of plants. Charaka Samhita(1000-100AD) has recorded 2000 vegetables remedies. Ancient medicine was not solely based on empiricism and this is evident from the fact that some medicinal plants which were used in ancient times still have their place in modern therapy(das and Monda 2012). According to an estimate of WHO approximately 80% people of developing countries rely chiefly on traditional medicine for primary healthcare(Ghosh,2008). India has 15 Agro climatic zones and 17000-18000 species of flowering plants of which 6000- 000 are estimated to have medicinal usage in folk and documented systems of medicine, like Ayurveda, Siddha, Unani and Homoeopathy. About 960 species of medicinal plants are estimated to be in trade of which 178 species have annual consumption levels in excess of 100 metric tons. Medicinal plants are not only a major resource base for the traditional medicine & herbal industry but also provide livelihood and health security to a large segment of Indian population. (Marichamy 2013).

Out of the 34 global biodiversity hotspots, four are present in India. Various plant groups are present in India with its species strength at high concentrations. There are about 7244 algae, 2504 bryophytes, 1267 Pteridophytes, 74 gymnosperms and 17926 angiosperms present in the Indian sub-continent.

Madurai is one of the rich in biodiversity and associated traditional knowledge. Changes in traditional agricultural practice were evident from the fact that peoples preferred crops like paddy, banana, onion and rarely some medicinal plants. Their traditional, customary rights need to be recognized and protected. However, since traditional knowledge is based on collective innovation, not individual innovation, such rights cannot be individual rights but need to be community rights. Further, these knowledge systems are part of a heritage. Their protection, therefore, needs to be based on criteria different from the criteria of novelty used in patents. The Nagamalai hills south west and south of vagai river and 12 Km from Madurai city and off –suit of eastern ghats Adjacent to the historical samanar hills. Lot of siddhar lived in more than 500 years they were used rare medicinal plants for various disease, these are documented epigraphical words this knowledge is passed through oral communication from generation to generation (perumalsamy and Ignacimuthu, 1998,2000).

Importance of biodiversity and its implications for human well-being

Biodiversity underpins the form and function of ecosystems, which are of high value due to the life-supporting services they provide that meet human needs, both material and non-material. Biodiversity supports ecosystem services that have economic value for humans in terms of direct or indirect use. They are provisioning services, such as supplying of fuel and fodder, and regulating services, such as carbon sequestration and prevention of soil erosion. Moreover, biodiversity has non-use or existence value. For millions of Indians, biodiversity supports their very livelihoods and ways of life. In the Indian context especially, a range of socio-cultural values are derived from biodiversity that are philosophical, cultural and religious. Biodiversity and ecosystem diversity are reflected in the cultural and religious diversity of India through the varied values attached to biodiversity components and landscapes. India's many

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traditional knowledge systems and ethno medicinal practices are based on a close understanding of and dependence on biodiversity. The cultural or religious Importance of species and designation of sacred areas are well-known in India (see Part III, Section 3.1.5, Aichi Biodiversity Target 18). The socio-cultural as well as aesthetic values attached to species and landscapes are reflected not only in the age-old tradition of sacred groves but also through formal designation of natural heritage sites which are most often also sites of significant local, regional or national cultural heritage.

Many species have ethno-botanical significance and are used for medicinal purposes. They are also used for fuel wood. Anthropogenic pressures such as the rising population, an increase in the number of domesticated animals and construction of roads and hydel power stations and allied works have resulted in populations.

India is an identified mega diverse country, rich in biodiversity and associated traditional knowledge. In the past, ethno botanical research was predominately a survey of the plants used by villagers. A trained botanist identified the plants and recorded their uses. Sometimes an anthropologist was present to translate the disease descriptions, but rarely was a physician available to identify the disease(Choudhary et al., 2008.)

The Indian Patent Act provides for mandatory disclosure in patent application of the source and geographical origin of the biological material and associated traditional knowledge used in the invention. Also a vast repository of Traditional Knowledge (TK) associated with biological resources. Aim at safeguarding the biodiversity and regulating access to biological resources and associated traditional knowledge to ensure sharing of benefits. Indigenous communities have been the original owners of biodiversity. About 70% of the Indian population depends on traditional medicine for primary health care, which includes both codified and non-codified systems. The non-codified system has no written texts as such and is passed verbally from generation to generation. During this process of transfer of knowledge, much of the information has been lost due to various reasons, like lack of interest in the younger generation, non-availability of raw drugs (medicinal plants), absence of official recognition, policy and administrative support by governments at the state and national levels, etc.

METHODOLOGY

Ethno medicinal traditional experts having practical knowledge of plants in medicine were interviewed. An ethno medicinal records collected field trips was performed seventy days during June 2014 - feb 2015 at areas of Nagamalai Hills in Madurai District, Tamil Nadu. During the trips, ethno medicinal data interviews with elder person (men and women), were held to documented. The data contains botanical name, family, habit, habitat, vernacular name, parts used, symptoms of disease, ethno botanical uses, mode of drug preparation their condition, harmful effect and natural pictures.

The field survey, the information collected on plant species was mainly gathered through oral interviews that were held with selectively 16 knowledgeable elders (20 men and 9 women) between the ages of 40 and 85, and also with the assistance of local administrators and community leaders, who served as key informants. Information regarding, local name plants parts used ailments ,mode of preparation and administration were recorded through informal meeting, interview, open and group discussions and overt observation, with selected strata of informants. At the end of each interview, specimens of the plants were collected for scientific identification and herbarium preparation following standard procedures. Specimens number, local name, location and identification points were remarked on each herbarium

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sheet and field note book. The collected plants were identified according to different references concerning the medicinal plants of South India and voucher specimens were deposited in the Institute herbarium.

RESULTS AND DISCUSSION

List of medicinal plants used by in and around local people of Nagamalai hill

Table 1.
Ethno medicinal uses of people

S.No	Botanical Name	Vernacular	Family	Therapeutics
1.	<i>Abrus precatorius L.</i>	Kundumani	Fabaceae	Jaundice, strength of warm
2.	<i>Abutilon indicum (L.) Sweet.</i>	Thuthi	Malvaceae	piles
3.	<i>Acalypha indica L.</i>	Kuppameni	Euphorbiaceae	scabies
4.	<i>Achyranthes aspera L.</i>	Naiyuruvi	Amaranthaceae	wound
5.	<i>Aegle marmelos (L.) Correa.</i>	Vilvam	Rutaceae	Diabetes
6.	<i>Allium cepa L.</i>	Siruvengayam	Liliaceae	headache
7.	<i>Aloe vera (L.) Burm.f.</i>	Katthalai	Liliaceae	cooling
8.	<i>Alternanthera sessilis (L.) R.Br. ex DC.</i>	Ponnaganni	Amaranthaceae	snakebite
9.	<i>Amaranthus spinosus L.</i>	Mullukkeerai	Amaranthaceae	stomachache
10.	<i>Amaranthus viridis L.</i>	Kuppaikeerai	Amaranthaceae	stomachache
11.	<i>Alpinia officinarum Hance.</i>	chittarattai	zingiberaceae	Phlem
12.	<i>Andrographis paniculata (Burm.f) Wall.</i>	Siriyangai	Acanthaceae	Diabetes, dengue fever
13.	<i>Aristolochia bracteolata Retz.</i>	Aaduthindapaalai	Aristolochiaceae	Remove stomach warm
14.	<i>Azadirachta indica A. Juss.</i>	Vempu	Meliaceae	Small box
15.	<i>Bambusa arundinacea (Retz.) Roxb.</i>	Moongil	Poaceae	Body cooling
16.	<i>Borassus flabellifer L.</i>	Panai	Arecaceae	Body cooling
17.	<i>Capsicum annum L.</i>	Milagaai	Solanaceae	
18.	<i>Cardiospermum halicacabum L.</i>	Mudakkathan	Sapindaceae	Joint pain

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19.	<i>Cassia auriculata L.</i>	Aavarai	Caesalpinioideae	Body cooling
20.	<i>Centella asiatica (L.) Urban</i>	Vallarai	Apiaceae	Memmary power
21.	<i>Cissus quadrangularis</i>	Pirandai	Vitaceae	Arthritics
22.	<i>Citrullus colocynthis Schrad</i>	Kumitikaai	Cucurbitaceae	Stomach disorder
23.	<i>Citrus limon (L.) Burm.f.</i>	Narathaingai	Rutaceae	Skin disease
24.	<i>Cocos nucifera L.</i>	Thennai	Arecaceae	Body cooling
25.	<i>Coriandrum sativum L.</i>	Kothamalli	Apiaceae	digestive
26.	<i>Cucurbita moschata (Decne ex Lam.) Decne ex Poir.</i>	Poosani	Cucurbitaceae	diabetes
27.	<i>Cynodon dactylon (L.) Pers.</i>	Arugampullu	Poaceae	Rheumatism
28.	<i>Cyperus rotundus.</i>	Korai	Cyperaceae	cooling
29.	<i>Datura metel.</i>	Oomathai	Solanaceae	swelling
30.	<i>Delonix elata (L.) Gamble.</i>	Vathamadaki	Caesalpinaceae	Cold
31.	<i>Eclipta prostrate L.</i>	Karisilanganni	Asteraceae	Hair dose
32.	<i>Eucalyptus globulus Mill.</i>	Ecalptus	Myrtaceae	digestive
33.	<i>Ficus bengalensis L.</i>	Allamaram	Moraceae	Tooth ache
34.	<i>Hemidesmus indicus (L.) R.Br.</i>	Nannari	Asclepiadaceae	Fever urinary disorder
35.	<i>Hibiscus rosa-sinensis L.</i>	Chembaruthi	Malvaceae	Skin disease
36.	<i>Lawsonia inermis L.</i>	Maruthani	Lythraceae	Body colling
37.	<i>Lucas aspera L.</i>	Thumbai	Lamiaceae	Head ache
38.	<i>Morinda pubescens Sm.</i>	Manjanathi	Rubiaceae	Bone joint
39.	<i>Moringa oleifera auct.</i>	Murungaai	Moringaceae	fertility
40.	<i>Murraya koenigii (L.) Spreng.</i>	Kariveppelai	Rutaceae	diarrhoea
41.	<i>Ocimum santum L.</i>	Tulasi	Lamiaceae	cold
42.	<i>Phyllanthus amarus Schum & Thonn.</i>	Keellanelli	Euphorbiaceae	jaundice
43.	<i>Phyllanthus emblica</i>	Nelli	Euphorbiaceae	dysentery
44.	<i>Physalis minima L.</i>	Sudakkuthakkali	Solanaceae	Wound
45.	<i>Piper betle L.</i>	Vetilai	Piperaceae	Cold
46.	<i>Piper longum L.</i>	Thipli	Piperaceae	Fever ,tooth ache

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47.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Kodukkapuli	Mimosaceae	Anti diabetes
48.	<i>Psidium guajava</i> L.	Koyya	Myrtaceae	Faecal free
49.	<i>Punica granatum</i> L.	Madhulam	Punicaceae	Anti diabetes
50.	<i>Solanum nigrum</i> L.	Kuttythakkali	Solanaceae	Body heat
51.	<i>Solanum trilobatum</i> L.	Thuthuvzhilai	Solanaceae	Cough, fever
52.	<i>Syzygium cumini</i> (L.) Skeels.	Naaval	Myrtaceae	Anti diabetes
53.	<i>Terminalia chebula</i> Retz.	Kadukkai	Combretaceae	Digestive disorder
54.	<i>Tridax procumbens</i> L.	Thathasedi	Asteraceae	Wound
55.	<i>Vetivera zizanioides</i> (L.) Nash.	Vetiver	Poaceae	Hair growth
56.	<i>Zingiber officinale</i> Roscoe.	Inchi	Zingiberaceae	Indigestion
57.	<i>Artemisia nilagirica</i> C.B. Clarke	Masipattai	Asteraceae	Antileprotic
58.	<i>Asparagus racemosus</i>	thiruneetrapachai	Asparagaceae	Cold
59.	<i>Azima tetraantha</i> Lam.,	Sangumullu	Salvadoraceae	Wound
60.	<i>Calotropis gigantea</i> L.,	Erukku	Asclepiadaceae	Scorpion sting
61.	<i>Carica papaya</i> L.,	Papaya	Caricaceae	Dengue fever
62.	<i>Cassia tora</i> L.,	Thagarai	Caesalpiniaceae	Skin disease
63.	<i>Catharanthus roseus</i> L.,	NithiyaKalyani	Apocyanaceae	anticancer
64.	<i>Cissus quadrangularis</i> L.,	Pirandai	vitaceae	Joint bone
65.	<i>Coleus aromaticus</i> Benth.	karpuravalli	Lamiaceae	Urinary disease
66.	<i>Euphorbia hirta</i> L.,	Ammanpacharisi	Euphorbiaceae	Wound
67.	<i>Gymnema sylvestre</i> R.Br.	Sirukurunjan	asclepiadaceae	Diabetes
68.	<i>Leucas aspara</i> Willd.	Thumbai	Lamiaceae	Thumbai

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69.	<i>Mimosa pudica L.</i> ,	Thottalsiningi	Mimosaceae	cold
70.	<i>Mucuna Pruriens Lnn.</i> ,	Poonaikali	Fabaceae	Urinary disease
71.	<i>Nerium oleander L.</i> ,	Arali	Apocynaceae	poisonous
72.	<i>Ocimum basilicum L.</i> ,	Tiruneetrapatchai	Lamiaceae	cold
73.	<i>Pergularia daemia Chiov.</i> ,	Veliparuthi	Asclepiadaceae	Cough
74.	<i>Pterocarpus marsupium Roxb.</i>	Vengai maram	Fabaceae	Stomach ache

Exploration of plants traditional knowledge experts suggests that 74 species of plants distributed in 66 genera belonging to 34 families were documented by using various ailments.

Though the respondents shared that the process of collection of medicinal plants is time consuming and tedious, it was observed that villagers were more interested in selling these medicinal plants instead of using them for self-cure. But, this trade is more or less in the informal sector and so difficult to document.

As similar ethno botanical research papers of this, there is continuous erosion in the traditional knowledge of many valuable plants being used for ethno medicines. (John De Britto and Mahesh 2007a and 2007b; John De Britto et al., 2008; 2010; 2011; Mahesh and John De Britto 2009; Mahesh and Muthuchelian, 2012) also reported earlier that there is urgent need to explore the herbal wealth and their documentation so that the future progenies may come to know about indigenous plant species of the area.

Nowadays, rural life is changing into fast life of modern cities. This change is affecting the young generation and overall increasing willingness to use allopathic medicines over ethno medicines for its faster effect.

Further, the youth generation in this village was not showing keen interest towards learning these traditional medical practices due to less income and less concern among the public. Though it is effective and curative, it is observed as better in these systems of medicine that the arrival of modern medicine and cosmetics now days play a vital role in the gradual decline of utilization of this traditional medicine.

CONCLUSION

Conservation of the five elements - land, water, air, fire and space - has an intrinsic value to the existence of mankind. Each of these elements manifests themselves in the varied flora and fauna around us. It is through recognising the value of environment, the awareness to conserve the same that we can secure our future. In the overall perspective more serious efforts are needed by us towards the use of our plant resource lining conservation strongly with utilization value of diversity. So there is an urgent need to inventories and record all the ethno medicinal plants and traditional knowledge information being practiced and to conserve the rich herbal wealth of the area. Let's do our bit and leave behind a thriving planet for generation next!

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It is necessary to create awareness among the public about the safeness of ethno medicine.

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