



TRADITIONAL USE OF MEDICINAL PLANTS AND ITS STATUS AMONG THE TRIBES IN MANANTHAVADY OF WAYANAD DISTRICT, KERALA

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Abstract- Documenting the indigenous knowledge through botanical studies is important for the conservation and utilization of biological resources. The information on the traditional uses of plants and its status is lacking in Mananthavady of Wayanad district. The paper documents the traditional knowledge of medicinal plants that are in use by the indigenous tribes residing in pockets at Mananthavady forests. About 295 medicinal plant species belonging to 93 families have been recorded. The five major tribes namely Kurichia, Kuruma, Kattunaika, Adiyana and Paniya residing at Thirunelly, Kartikkulam, Thalappuzha, Kuruva, Kunhome and Mangalassery forest areas are using these plants for the treatment of various health problems. Among these 5 species are endangered, 22 species are vulnerable, 11 species are rare and 220 species are abundant.

Key words- Traditional uses, tribes, medicinal plants, therapeutic use, kurichia, mananthavady, wayanad, indigenous knowledge.

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Introduction

India is rich in ethnic diversity and traditional knowledge (TK) that has resulted in a considerable body of ethno botanical research, of which one study has revealed a deep understanding of medicinal plants supported by high consensus. The term ethno botany was coined in 1895 by the North American botanist John Harshberger to describe the studies of plants used by primitive and aboriginal people [1] living in rural and forest areas. Rural people of the study area have strong relations with the surrounding environment.

We can distinguish two different goals or approaches to this study: the contribution to the knowledge of a part of human cultural heritage and search for new drugs or useful plant derived products. On the other hand the most recent term ethno pharmacology has undergone only slight evolution in meaning since its original definition as a multidisciplinary area of research concerned

With the observation description and experimental investigation of indigenous drugs and their biological activities [2]. Due to the side effects of modern allopathic drugs in the present days, people are attracted towards herbal medicines and their consumption.

Documenting the indigenous knowledge through ethno botanical studies is important for the conservation and utilization of biological resources. Ethnobotanical survey has been found to be one of the

reliable approaches in drug discovery [3]. Traditionally this treasure of knowledge has been passed on orally from generation to generation without any written document [4] and is still retained by various indigenous groups around the world. Today, it is estimated about 64 % of the total global population remains dependent on traditional medicines [5]. Traditional medicine is becoming popular in the world today. The global market for traditional therapies estimated to be at \$60 billion a year and is steadily growing [6].

The traditional medical practices are an important part of the primary health care system in the developing world [7]. According to World Health Organization (WHO) about 65-80% of the world's population in developing countries, due to the poverty and lack of access to modern medicine, depended essentially on plants for their primary healthcare [8].

However the knowledge of medicinal plant is rapidly dwindling due to the influence of western life styles, reduction in number of traditional healers and the lack of interest of younger generations to carry on the tradition [9,10].

Kerala the Southernmost state of India is known for its biodiversity reserve, high cultural heterogeneity and high rate of literacy. There are five major ethnic groups namely Kurichia, Kuruma, Kattunaika, Adiyana and Paniya groups scattered along the western Ghats forest [11]. These tribes use different medicinal plants for their primary

healthcare and other purposes on the basis of their traditional knowledge. Present study was devised to document the traditional knowledge of medicinal plants used by the tribes in Mananthavady forests for sustainable utilization and development.

Materials and Methods

The study area Mananthavady taluk is located in Wayanad district of Kerala (Fig. 1). It lies between North latitude 11° 45' and 11° 58' and East longitude 75° 50' and 76° 5'. It lies at an altitude of 700-2100 M above sea level. The mean maximum and minimum temperature were 29° C and 18° C.

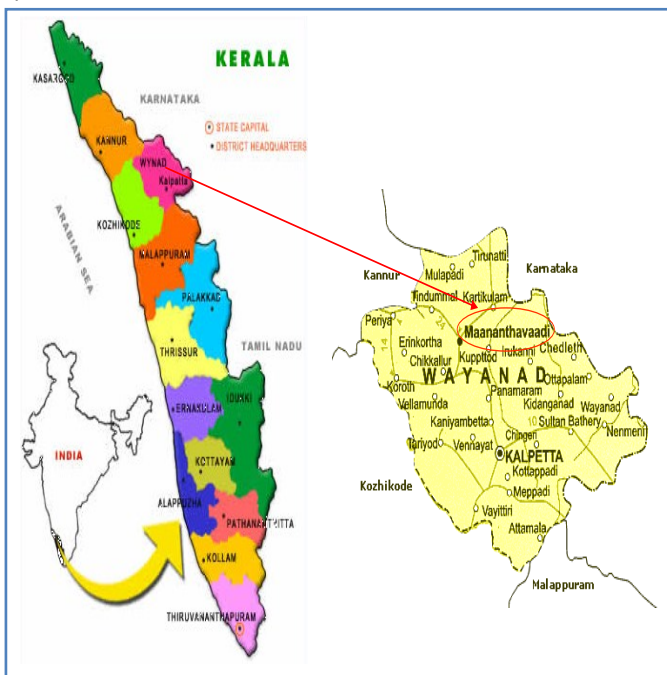


Fig. 1- Map showing the study area Mananthavady taluk

Periodic field trips of ethno botanical exploration was undertaken between 2007-2009 in Mananthavady forests of Wayanad district. During the surveys personal interviews were conducted with the herbal medicine practitioners, traditional healers, elderly tribal people and village dwellers.

The plant specimens were collected and identified using Local flora [12], available field keys and with the help of taxonomists at M.S. Swami Nathan Research Foundation, Kalpetta and Calicut University, Kerala.

Data on the plant species, local names and parts used, disease treated and mode of preparation and administration of medicine were recorded. The collected data were processed. A list of Threatened medicinal plants and its present status in the region with their vernacular names, parts used and therapeutical applications is shown in Table-1.

Results and Discussion

The present study documented 295 medicinal plant species belonging to 93 families used by the Kurichia, Kuruma, Kattunaika, Adiyar and Paniya tribes residing at different forests of Mananthavady taluk. Among these 39 species are used for the treatment of skin problems, followed by 33 species for abdominal problems,

20 species for arthritis, 19 species for fever, cough and cold, 12 species for head ache, diabetes and piles, 9 species for circulatory disorders and uterine problems, 8 species for snake bite and asthma, 7 species for worm infection and poison, 6 species for urinary problems and ulser, 4 species for veterinary problems, anticancerous, jaundice, wound, bruise and sprain and 3 species for tooth-ache. (Fig. 2). The most prominent disease treated by the tribes in the study area were skin problems like psoriasis, itching and boils. A previous study on Mullukuruma tribes in Noolpuzha village panchayath of Wayanad district by [11] documented 14 plants for the treatment of skin diseases. In the present study plant species reported for the treatment of skin diseases in Mananthavady taluk shows a frequent usage of different plant parts like the leaves and roots of *Bauhinia tomentosa*, leaves of *Cassia tora*, roots, leaves and seeds of *Clitoria ternata*, whole plant of *Cynodon dactylon*, roots of *Gloriosa superba*, leaves of *Indigofera tinctoria*, leaves of *Argyrea nervosa*, leaves of *Asclepias curassavica*, flower paste of *Calophyllum apetalum*, whole plant of *Chassalia curviflora*, bark of *Cinnamomum camphora*, tuber of *Curcuma zedoaria*, Leaves of *Embelia ribes*, whole plant of *Emilia sonchifolia*, whole plant of *Euphorbia thymifolia*, whole plant of *Hedyotis brachypoda*, seeds of *Hydnocarpus macrocarpa*, tuber of *Ipomoea marginata*, Leaves of *Leucas species* etc.

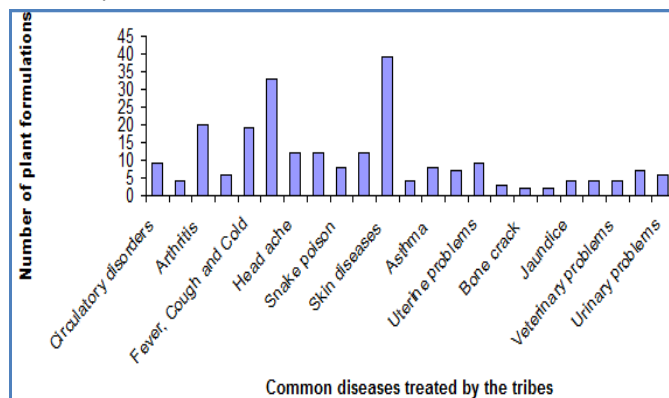


Fig. 2- The diseases treated with the number of plant formulations by the traditional healers in Mananthavady taluk

The Kurichia tribes are using the leaf juice of *Atalantia racemosa* Wight var. *racemosa* internally to treat acidity. The present study reports that, Kurichia and Adiya tribes use leaf, root and latex of *Tabernaemontanum divaricata* for the treatment of intestinal worms. The most common medicinal use of *Tabernaemontanum divaricata* involves its antimicrobial action against infectious diseases such as syphilis, leprosy and gonorrhoea as well as its antiparasitic action against worms, dysentery, diarrhea and malaria [13]. The Kurichia use the sun dried bark powder of *Oroxylum indium* to cure gastric ulcer. The Kurichia tribes use the fresh leaves of *Lantana camera* to make the massaging oil for the treatment of psoriasis. The leaf oil of this plant is used in the treatment of itches of skin [14]. The leaves and bark of *Pittosporum neelgherrense* are used as antidotes for snake bite by the kurichia tribes. Similar type of treatment for snake bite has been practiced by Malayar tribes [15].

Even though all plant parts are valuable, the preparation of a formulation requires specific parts of plants. The tribes are using various plant parts such as leaves (110 species), barks (58 species),

whole plants (56 species), roots (35 species), fruits (37 species), seeds (26 species) and underground parts (25 species) of different species. The paper provides knowledge related to edible parts of 35 species of plants, amongst which a few are of medicinal value. This includes *Diospyros malabarica* (Fruit), *Elaeagnus conferta* (Fruit), *Elaeocarpus tectorius* (Fruit), *Moringa oleifera* (Leaf), *Spondias pinnata* (Fruit), *Syzygium cumini* (Fruit), *Syzygium laetum* (Fruit), *Syzygium tamilnadensis* (Fruit) etc.

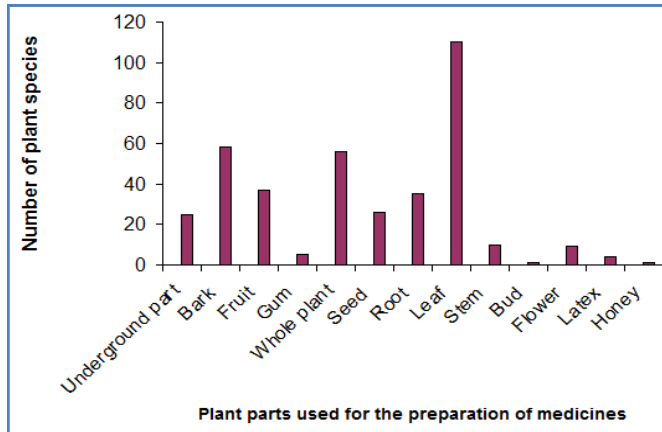


Fig. 3- Plant parts used from different plant species for the preparation of medicines in Mananthavady taluk

The data obtained from our results showed that about 149 plants have external use and 81 plants are internally applied. We observed that most of the tribal medicines in this region are being prepared from the members of Fabaceae (17 species) followed by

Euphorbiaceae, Asteraceae and Apocynaceae (12 species), Rutaceae and Caesalpiniaceae (11 species) (Fig. 3).

Our studies also revealed that about 2% of the existing species are endangered, 9% are vulnerable, 4% are rare and 85% are abundant (Fig. 4).

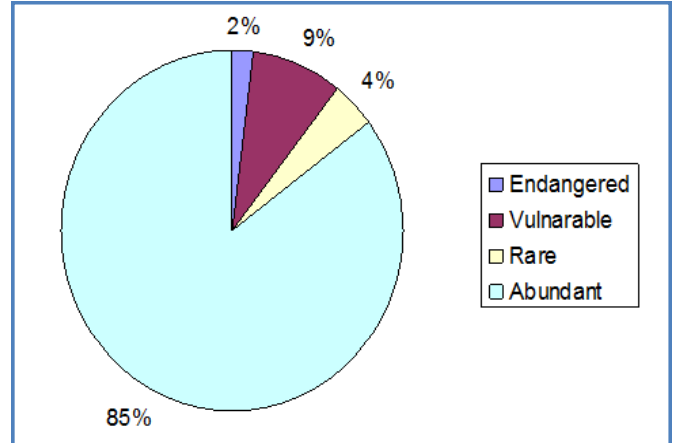


Fig. 4- The percentage of threatened and abundant flora of Mananthavady taluk

The exploitation of these species for medicinal purposes has picked up without much attention for their conservation. The present documentation about the traditional knowledge of medicinal plants and their status in Mananthavady of Wayanad district serves as a valuable information tool for future sustainable use and conservation.

Table 1- List of Threatened Medicinal Plants of Mananthavady

BOTANICAL NAME	LOCAL NAME	FAMILY	PARTS USED	THERAPEUTIC USE	TRIBES ASSOCIATED	STATUS
<i>Acorus calamus L.</i>	Vayambu	Araceae	Whole plant	The plant juice is administered orally to treat abdominal pain and diarrhoea. Tuber paste is taken orally to control blood circulation.	All	Endangered
<i>Actinodaphne malabarica Balakr.</i>	Vatt Kambilyirinji.	Lauraceae	Bark.	The bark paste of this plant with the bark paste of <i>Pterospermum suberifolium</i> mixed together and applied topically to bruised part of the body.	Kurichia	Rare
<i>Amorphophallus paeoniifolius (Dennst.) Nicols var. paeoniifolius</i>	Kattuchena	Araceae	Corn.	Edible. Medicine for piles.	All	Vulnerable
<i>Aristolochia tagala Cham.</i>	Garudakkody	Aristolochiaceae	Whole plant	The plant Paste taken internally to cure abdominal pain.	All	Rare
<i>Artocarpus hirsutus Lam.</i>	Anjili	Moraceae	Leaf	Burn the leaves of <i>Artocarpus hirsutus</i> , the ash is taken internally to treat abdominal problems.	Paniya, Kurichia, Adiyana, Kattunaika	Vulnerable
<i>Baliospermum montanum (Willd.) Muell.-Arg.</i>	Nagadenthi	Euphorbiaceae	Root, Seed, Leaf	Root paste is applied externally on the painful swelling of piles.	Kurichia, Kuruma, Kattunaika.	Vulnerable.
<i>Calophyllum apetalum Willd.</i>	Cherupunna	Clusiaceae	Seed, Flower	Seed powder is taken internally to cure menstrual disorders. The flower paste is applied on the body to get relief from itching.	Kuruma.	Vulnerable.
<i>Celastrus paniculatus Willd.</i>	Palulavam.	Celastraceae	Bark, Leaf, Seed	Brain tonic, Seed oil promotes intelligence.	Kurichia.	Vulnerable.
<i>Chonemorpha fragrans (Moon) Alston</i>	Perumkurumba	Apocynaceae	Root	The rubbed root paste is applied on the skin cures skin diseases. The rubbed root paste is taken internally to purify blood.	Kurichia.	Vulnerable.
<i>Cinnamomum macrocarpum Hook.f.</i>	Karuva	Lauraceae	Bark, Root, Leaf	The oil extracted from the root, bark and leaf is used to prepare massage oil for rheumatism. The powdered bark is taken internally with honey to treat cough.	All	Vulnerable.
<i>Cinnamomum sulphuratum Nees</i>	Kaattu karuva	Lauraceae.	Bark, Leaf	The leaf and bark paste is taken internally to treat cough and head ache.	All	Vulnerable.
<i>Cinnamomum zeylanicum Blume</i>	Karuva	Lauraceae	Bark	The bark powder mixed with honey is taken internally to treat cough and dysentery	All.	Vulnerable.

Table 1- Continues

BOTANICAL NAME	LOCAL NAME	FAMILY	PARTS USED	THERAPEUTIC USE	TRIBES ASSOCIATED	STATUS
<i>Coscinium fenestratum</i> (Gaertn Colebr.)	Maramanjil	Menispermia-ae	Underground part Stem	By applying the grinded underground part cures skin diseases and reduces leucoderma. The grinded stem is used to treat bleeding piles.	Kurichia, Kuruma	Critically endangered
<i>Curcuma zedoaria</i> (Christm.) Rosc	Kaattu manjal	Zingiberaceae	Tuber	Grinded tuber is a good medicine for psoriasis	All	Vulnerable.
<i>Cycas circinalis</i> L.	Eanth	Cycadaceae	Bark, Seed	Eating the seed powder with ghee increases sperm production	Kurichia.	Vulnerable.
<i>Dipterocarpus bourdillonii</i> Brandis	Karanjili Kalpayin	Dipterocarpace-ae	Gum	The smoke coming from the burned resin Cures swelling due to rheumatism on the legs.	Kurichia.	Endangered
<i>Dysoxylum malabaricum</i> Bedd.ex Hiem	Akil, Vellakil	Meliaceae	Bark.	Anticancerous. Medicine for rheumatism.	Kuruma	Vulnerable
<i>Aegle marmelos</i> (L.) Correa.	Koovalam	Rutaceae	Root, Bark, Leaf, Fruit	Medicine for dysentery, fever, vomiting, body pain, pilesand jaundice. Promote digestion.	All.	Rare
<i>Embelia ribes</i> Burm.f.	Vizhal	Myrsinaceae	Leaf	Grinded leaf is applied on the skin to cure skin problems.	Kurichia	Rare
<i>Embelia tsjeriam-cottam</i> (Roem.&Schult.)DC.	Kattu vizhal	Myrsinaceae	Root, Leaf	Grinded root juice is a component of medicine for diarrhea and pneumonia.	Kurichia	Vulnerable.
<i>Garcinia gummi gutta</i> (L.) Robs.var gummi -gutta	Kudampuli	Clusiaceae	Seed, Leaf, Fruit	The seed is fermented and the solution mixed with salt and garlic and applies 2 drops inside the throat. And the remaining smears outside the throat. It is used to cure tonsillites, ulcer, bleeding, piles, dysentery and diarrhoea.	Kurichya	Rare
<i>Gloriosa superba</i> L.	Menthonni	Amarillidaceae	Tuberou s root	Bleeding piles,White discharge,skin diseases	Kurichia.	Rare
<i>Goniothalamus wynaadensis</i> (Bedd.)Bedd.	Anappanal	Annonaceae	Bark.	Medicinal	Kurichia.	Rare
<i>Hedychium coronarium</i> Koening	kalyanasouganthi-kam	Zingiberaceae	Rhizome.	The rhizome paste is applied on the bruised part	Kuruma, Adiyan, Kurichia	Rare
<i>Holigama beddomei</i> Hook.f.	Malancheru	Anacardiaceae	Bark	Dried bark is used to cure dysentery	Kurichia.	Vulnerable.
<i>Hopea glabra</i> Wight&Am.	Irumbakam.	Dipterocarpace-ae	Leaf.	Antiviral.	Kuruma	Vulnerable
<i>Humboltia brunonis</i> Wall.	Malayasokam	Caesalpinia-ceae.	Leaf, Bark	Medicinal	Kurichia, Kattunaika	Vulnerable
<i>Hydnocarpus macrocarpa</i> (Bedd.)	Malamarotty	Flacourtiaceae	Seed	The oil extracted from the seeds of this plant is used to treat skin diseases	Kurichia.	Endangered
<i>Madhuka nerifolia</i>	Aattu Elippa	Sapotaceae.	Honey	Medicinal	kurichia, kuruma, Kattunaika.	Vulnerable
<i>Nothapodytes nimmoniana</i> (Graham) Mabb.	Ulukkuvetty	Icacinaceae	Leaf	Cut the leaves of Ulukkuvetty in to small pieces and fry it in a pan and take one egg and fry it in another pan and both mix together and fry again and inhale the smoke coming from it with eyes opened.it cures head ache after delivery. The leaves of ulukkuvetty and pachamanjal grind together and apply on the affected part and massage properly. It reduces swells.	Kurichya	Vulnerable
<i>Pseudarthria viscida</i> (L.) Wight &Am.	Moovila	Fabaceae	Root.	Root juice is taken in to treat fever, diarrhea, asthma, worms & piles.	Kurichia, Kattunaica, Kuruma.	Vulnerable.
<i>Raphidophora pertusa</i> (Roxb.) Schott.	Anachakkara.	Araceae	Flower Leaf	Mumps&tonsilitis.	Kurichia, Kattunaika.	Rare.
<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandhi	Apocynaceae	Leaves	A leaf of sarpagandhi and nagam is a good medicine for snake poisons.	Kurichya, Kuruma	Endangered
<i>Saraca asoka</i> (Roxb.)deWilde.	Ashokam	Caesalpinia-ceae	Bark	used in the treatment of menorrhagia, uterine infection, haemor-rhagic dysentery, internal bleeding,...	All.	Vulnerable
<i>Smilax zeylanica</i> L.	Kariyilanchi	Smilacaceae	Root	The root juice is used to cure rheumatism, skin troubles and blood dysentery.	Kurichia, Kuruma, Kattunaika.	Vulnerable.
<i>Solenocarpus indicus</i> Wight & Am. Tree	Kattanbazham	Anacardiaceae	Fruit, Bark.	Medicinal(Did not get more information related to medicine prepara-tion.from the tribes	All	Rare
<i>Symplocos cochinchinensis</i> (Loureiro) S. Moore,	Paachotti	Symplocaceae	Leaf.	The leaf Paste is applied on the forehead to cure head ache. A mixture of coconut oil and the juice of pachotti leaves boiled and prepare the massaging oil applied on the affected part to cure Leucorrhea and Psoriasis.	Kurichia.	Vulnerable.
<i>Symplocos racemosa</i> Roxb.	Valiya pachotty	Symplocaceae	Bark,	Leucorrhea, Liver diseases	All	Vulnerable.
<i>Tinospora sinensis</i> (Lour.) Merr.	Kaattamruthu	Menisperma-ceae	Stem	The stem juice is taken internally to treat piles and ulser	Kurichia.	Rare

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