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A Study on the Ethno botanically Important Plants used by the *Mullakuruma* Indigenous Tribe for Various Ailments in Wayanad District, Kerala

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Abstract— The knowledge on the richness of plant diversity in any area and the intensity of associations and dependence of the indigenous communities on that plant wealth is very vital for better utilisation of biodiversity. The present study was an attempt to record the ethnobotanical data regarding medicinal plant use by a highly represented tribe–Mullakuruman of Wayanad District, Kerala, India. A total of 60 user reports regarding 57 species were recorded from six traditional healers. Mention of each use of a species with respect to a disease was treated as a separate event and considered as a user report.
Keywords- Mullakuruman-Traditional knowledge-Kerala.

I. INTRODUCTION

People around the world possess unique knowledge of the natural resources on which they depend including tremendous botanical expertise. Indigenous people are the faculty keepers of the cumulative knowledge of generations; the plants they use are the stockroom of potential medicines [1].Popular knowledge of plants used by humans is based on thousands of years of experience. By “trial and error”, people learnt how to recognize and use plants, including those with a magic-religious function [2]. Less than 1 percentage of indigenous cultures has been surveyed for their knowledge of medicinal plants and other natural products in the world [3]. Identifying the ethno medicinally important plants that warrant chemical analysis and testing for biological activity is one of the main aims of ethno botany [4]. Plants are so much a part of our environment and the fabric of our everyday lives that they rarely register in our conscious thought [5]. Alcorn [6, 7] has discussed how the human relationships with plant resources, *i.e.*, the human, cultural, and material uses of plants are largely shaped by history, and by physical and social environments. These relationships cover a very wide canvas, from wild foods, medicines, fibers, fodders, dyes, and body ornamentation, *etc.* to still more important, but less understood areas of the social and religious relationships, like beliefs, faith, taboos, worship and even protection and preservation. The richness of plant diversity in any area is not evaluated by the number of species occurring there, but by the intensity of associations and dependence of the indigenous communities on that plant wealth and, respect for this knowledge helps in conservation [8].

Wayanad, the green paradise, lies nestled among the misty mountains of Western Ghats at a height of 700-2100 m. above sea level on the northern part of the Kerala state. The name, *Wayanad*, is believed to have been derived from the word, *Vayal nadu*, meaning the land of paddy fields which comprises of about 2126 sq.kms. Evidences about New Stone Age civilization are obtained in plenty from the hills of Wayanad. As Wayanad is the district with the highest percentage of tribal population in the state, when one considers the fast pace of modernisation and acculturation exposing these traditional communities to modern methods of medicine and lifestyles, this study is the urgent need of the hour to stay ahead of the curve for the search for new bioactive molecules, that could be lead molecules for novel drug discoveries in future. The native *Adivasis* mainly consist of various sects like *Paniyas, Kurumas, Adiyans, Kurichyars, Ooralis, Kattunaikans, etc.* The tribal population in Wayanad district is having tremendous knowledge regarding the medicinal use of plants. This study is focused on the traditional knowledge possessed by the *Kuruma /Mullakuruma* tribe in Wayanad district, Kerala regarding various ailments.

II. MATERIAL AND METHODS

A. Study Area

Wayanad lies between North latitude 11^0 27' and 15^0 58' and East longitude 75^0 47 ' and 70^0 27'. It is bounded on the east by Nilgiris and Mysore districts of Tamil Nadu and Karnataka respectively, on the north by Coorg district of Karnataka, on the south by Malappuram districts and on the west by Kozhikode and Kannur districts of Kerala.

B. Data Collection

Study sites, knowledgeable informants identification, work plan, data collection procedures and literature survey was completed before starting field work. Five traditional healers belonging to *mullakuruman* tribe who have a track record of more than ten years of treatment and who are actively doing it were selected from the district. The senior most key informant was 69 years

old and the youngest one was of 36 years old. Three of them were males and other two female. Knowledge dissemination in this community occurs across gender and is unique in this community. Rapport was build with the key informants after repeated visits to their dwellings. Field survey stage was done in all seasons from November 2008 to December 2014. Semi structured interviews were done repeatedly with each and every informant several times followed by a transect walk into the forest areas with the permission of the forest officers and plant specimens and habitats were surveyed thoroughly. Local names, methods of identification used by informants, conservation strategies regarding each and every specimen were recorded. Every word from the interviews was recorded using a digital voice recorder and saved into computer. Video documentation of sites, informant's dwellings, and interviews were also made. Original specimens of plants used by these informants were collected and made into herbarium sheets as per international standard procedures and deposited at Sree Narayana Mangalam College Herbarium.

C. Study Tribe

The *Mullakuraman* is a tribal community inhabiting the Wayanad district along with other two tribal communities namely- *Uralikuruman* and *Tenkuruman* respectively with the suffix *kuruman* in their tribe name. These three are but distinct endogamous tribes speaking their own languages and differing greatly in their economic pursuits. *Mullakurumans* are settled agriculturists while *Uralikurumans* are artisan community, specialised in hand made pottery, while *Tenkurumans* are food gatherers [9]. The *Mullakuruman* are adapted to cultivate wet land paddy. Sexual division of labour is well specified amongst the *Mullakuruman.* Heavy jobs are undertaken by males, while milder jobs like transplanting and weeding are done by females. *Mullakuraman* hamlets are called *'kudis'* and are strictly uni ethnic in nature. Each *'kudi'* constitute a cluster of very closely built houses; one house touching the other. In the centre of the *'kudi'* is God's house called *'daivapura'* which serves as a meeting place for the whole hamlet in connection with birth, puberty, marriage and death. All the male members of a *'kudi'* are patrilineally related. The head for all religious, political, social and health related matters is the elder member of the clan called *'Porunnavan'* who presides over ceremonies like marriages, death *etc.*

The *Mullakuruman* healer is called *'vaidyakkaran'*. He has a host of herbal applications and therapeutic maneuverings at his disposal for effecting cure. There are generalists and specialists among *'vaidyakkarans'*. Specialists treat only particular diseases such as snake bite, jaundice, broken bone *etc.*, and their position is acclaimed by the results they produce on the patients. Generalists keep themselves busy by making home visits. Usually the *'vaidyakkarans'* are initiated to the art of herbal therapy by their parents or close relatives who were acclaimed healers. A healer does not teach his knowledge to many but selects a person from his community to train him. A novice in medicine does not usually start treating any one until the death or incapacitation of his mentor. The healers strongly believe that if they divulge the medicinal recipes to another individual their medicine will not be effective since the latter may lack the blessings of an ancestor or deity. *Mullakuruman* healers show great resistance in revealing anything about their herbal applications. They strongly believe that their knowledge is sacred and it may lose its potency if revealed to another man other than his disciple. They do not take any remuneration for the prescriptions.

III. RESULTS AND DISCUSSION

The format adopted for enumeration of quoted species is as follows - Species name, collection number, Family, common name, part used, disease and method of use. Plant use data regarding the treatment of various diseases were collected and presented below. Most of them still depend on traditional medicinal practitioners for their primary healthcare. Slowly they are also exposed to modern medicine and depend on the other systems during cases of emergency. Plant use data regarding fifty seven species are presented in this study.

A. *Achyranthes aspera* L.var. *aspera*., SNMH488, Amaranthaceae, Kadaladi, entire plant, inflammation, decoction 1 ounce taken in thrice a day.
B. *Adathoda vasica* Nees., SNMH28, Acanthaceae, Adalodakom, leaves, cough, juice of leaves taken thrice a day.
C. *Alpinia calcarata* Rosc., SNMH493, Zingiberaceae, Chittaratha, Rhizome (Stem tuber), muscle pain, one major ingredient for making pain relieving oil.
D. *Ampelocissus latifolia* (Roxb.) Planch., SNMH497, Vitaceae, Chembravalli, stem, Varicose vein, method not disclosed.
E. *Aristolochia indica* L., SNMH505, Aristilochiaceae, Aduthinnapla, Root, Anti Poison treatment, method not disclosed.
F. *Asparagus racemosus* Willd., SNMH494, Lilaceae, Sathavari, Tuber, Menstrual problems, powder 5 gm taken in the morning with milk.
G. *Bacopa monnieri* (L.) Pennell, SNMH490, Scrophulariacea, Brahmi, leaves, for increasing brain power, juice 1/2 ounce given for infants with milk in the morning.
H. *Caesalpinia bonduc* (L.) Roxb., SNMH507, Caesalpiniaceae, Kazhanjikuru, Seed, stomach pain, seed kernel roasted, powdered and taken in.
I. *Careya arborea* Roxb., SNMH14, Lecthidiaceae, Pezhu, Bark, Wound, Bark, ground into paste and applied on the wound.

J. *Coscinium fenestratum* (Gaertn.) Colebr., SNMH513, Menispermaceae, Maramanjal, stem, Hyper Pressure, pieces of stem put in 1 glass water overnight and water taken in the morning in empty stomach.
K. *Croton persimilis* Mull. Arg., SNMH512, Euphorbiaceae, Thomraji, Root Bark, Inflammation, decoction 1 ounce taken in daily in the morning.
L. *Cyathula prostrata* (L.) Blume., SNMH489, Amaranthaceae, Cheru kadaladi, entire plant, inflammation, decoction 1 ounce taken in thrice a day.
M. *Cyclea peltata* (Lam.) Hook., SNMH508, Menispermaceae, padathali, tuber, stomach pain, dried tuber powdered and taken in.
N. *Cyclea peltata* Diels., SNMH41, Menispermaceae, Pavatta Valli, Leaves, skin swellings, leaves, pasted and applied on skin lesions.
O. *Cynoglossum zeylanicum* (Vahl. ex Hornem.)Thunb., SNMH5, Boraginaceae, Mudichilooram, leaves, migraine, leaves pasted and applied on fore head.
P. Datura metel L., SNMH 43, Solanaceae, Ummam, Leaves, Arthritis, leaves extracted in oil and applied on joints.
Q. *Datura stramonium* L., SNMH33, Solanaceae, Ummam, entire plant, Asthma, fried leaves powdered and taken after meals daily.
R. *Drymaria cordata* (L.)Willd., SNMH44, Caryophyllaceae, Peratta, leaves, Arthritis, leaves extracted in oil and applied on joints.
S. *Eclipta prostrata* (L.) L., SNMH 50, Asteraceae, Kayyuniam, Leaves, Hair oil, Extracted hot in oil and applied on hair for better growth.
T. *Elephantopus scaber* L., SNMH 3, Asteraceae, Ana Adiyan, root, vomiting, decoction in water I ounce taken in 3 times a day.
U. *Diospyros peregrina* (Gaertn.) Gurke.,SNMH530, Ebenaceae, Panachikka, Fruit, Treating conceiving problems, dried with *Croton persimilis* leaf and taken in as powder 5 gm in the morning.
V. *Ficus exasperata* Vahl., SNMH509, Moraceae, Parakam, Root Exudate, Cholera, Watery exudate from cut root taken in.
W. *Emblica officinalis* Gaertn., SNMH12, Euphorbiaceae, Nelli, bark, tooth ache, a small piece is bitted with the affected teeth for half an hour.
X. *Hedyotis auricularia* L., SNMH51, Rubiaceae, Tartarvan, leaves, Stomach ache of children, leaves pasted with fresh turmeric and given raw twice a day.
Y. *Hemidesmus indicus* R.Br., SNMH15, Asclepiadaceae, Nanari, Root, Tuber, Skin Swellings(kuru), ground into paste with rice and applied.
Z. *Hydnocarpus wightiana* Bl., SNMH36, Bixaceae, Marotti, seed oil, Chuduvathom, seedoil with *Ricinus* seeds oil and Neem oil applied hot on skin
AA. *Justicia gendarussa* Burm., SNMH9, Acanthaceae, Vatha Kodi, Leaves, Arthritis, Leaves boiled in water and bathed in it in the evenings .
BB. *Lantana camera* L., SNMH35, Verbenaceae, Kongini, Leaves, Mumps, leaves and Turmeric pasted and applied on skin.
CC. *Lobelia nicotianifolia* Roth ex Roem.& Schult. Varn., SNMH55, Lobeliaceae, Kattu pukayila, Leaves, karappan, leaves fried in coconut oil, pasted and applied on the skin.
DD. *Melicope lunu-ankenda* (Gaertn.) Hartley., SNMH2 Rutaceae, kambili, tender leaves, stomach ache, paste 5 gm and eaten raw.
EE. *Jatropha curcas* L., SNMH503, Euphorbiaceae, Kammatti, Leaves, Rheumatism, used in making fermented decoction (kashayam).
FF. *Lepianthes umbellata* (L.) Rafin., SNMH487, Piperaceae, Attanari, infloroscense (dried), asthma, powder taken in with sugar candy.
GG. *Mangifera indica* L., SNMH504, Anacardiaceae, Maavu, Bark, Diarrhoea, peeled bark covered with banana leaf sheath and put in fire then and its juice taken in.
HH. *Naravelia zeylanica* (L.) DC., SNMH536, Rananculaceae, Thalavedana valli, stem, Headache, fresh stem squeezed and covered with clean cloth and inhaled.
II. *Naringi crenulata* (Roxb.) Nicolson., SNMH502, Rutaceae, Nari narakam, leaves, Fitz (apasmaram), fresh leaves pasted and 5 gm given daily in the morning.
JJ. *Nelumbo nucifera* Gaertn., SNMH510, Nellumbonaceae, Thamara, Petals, skin rejuvenator, leaf powdered and made into paste with honey and applied on face.

KK. Nothapodytes nimmoniana (Graham) Mabb., SNMH496, Icacinaceae, Peenari, bark, Fitz (apasmaram), bark used for preparing medicinal bath water.

LL. Ocimum gratissimum L., SNMH501, Lamiaceae, Karpoora thulasi, leaves, Dandruff, extracted with hot oil and massaged before daily bathing.

MM. Plectranthus tomentosus Benth., SNMH500, Lamiaceae, Iruveli, leaves, wound healing, leaf juice applied externally over small wounds.

NN. Phyllanthus amarus Schum&Thonn. , SNMH46, Euphorbiaceae, Kizharnelli, Entire plant, Fatigue, Decoction in water and taken in daily.

OO. Pongamia pinnata (L.) Pierre., SNMH506, Fabaceae, Ungu, Bark, fungal infection on skin, powdered and applied on skin instead of soap while bathing.

PP. Pterospermum rubiginosum Heyne ex. Whight., SNMH535, Sterculiaceae, Edinjil, bark, inflammation, pasted with rice soup and applied over the skin.

QQ. Psidium guajava L., SNMH52, Myrtaceae, Pera, leaves, stomach ache, made into curry with buttermilk and taken in.

RR. Pterocarpus marsupium Roxb., SNMH1, Fabaceae, Venga, bark, fatigue, juice of fresh bark 1 ounce taken raw in the morning.

SS. Rhyncostylis retusa Bl., SNMH11, Orchidaceae, Mara Vazha, Leaves, Ear pain, leaves are heated and squeesed and two drops of juice applied in ear.

TT. Rotheca serrata (L.) Steane & Mabb., SNMH499, Verbenaceae, Cheruthekku, Root, Inflammation, decoction 1 ounce taken in daily in the morning.

UU. Ruta chalepensis L., SNMH492, Rutaceae, Arootha, Leaves, children Fever, juice 1/2 ounce given in.

VV. Ruta chalepensis L., SNMH492, Rutaceae, Arutha, Leaves, Epilepsy, pasted with garlic and given.

WW. Saraca asoca (Roxb.) de Wilde., SNMH498, Caesalpiniaceae, Asokam, flower, menstrual disorders, method not disclosed.

XX. Senna tora (L.) Roxb., SNMH534, Caesalpiniaceae, Thakara, Leaf, throat pain, powdered with garlic and cumin and 5 gm taken in.

YY. Schleichera oleosa (Lour) Oken, SNMH37, Sapindaceae, Poovam, seed, Athritis, pasted in oil and applied on joints.

ZZ. Scoparia dulcis L., SNMH34, Scrophulariaceae, Kallurukki, Leaves, Kidney stone, three leaves with garlic and Jeera pasted in milk and taken in daily.

AAA. Spermacoce latifolia Aubl., SNMH22, Rubiaceae, kammal chedi, leaves, Wound, made in to paste and applied on wounds.

BBB. Sphaeranthus indicus L., SNMH45, Asteraceae, Vanium, leaves, Epilepsy, leaves and garlic pasted in milk and given in the morning.

CCC. Spondias pinnata (L.) Kurz., SNMH54, Anacardiaceae, Ambhazham, bark, Loose motion, juice is mixed with butter milk and taken raw twice a day.

DDD. Stachytarpheta jamaicensis (L.) Vahl., SNMH7, Verbenaceae, Narivalan, leaves, muscular dis alignment, paste applied externally over affected area for few hours.

EEE. Terminalia bellirica (Gaertn.) Roxb., SNMH511, Combretaceae, Thani, bark, small pox,decoction taken in I ounce 3 times a day .

FFF. Terminalia bellirica (Gaertn.) Roxb., SNMH511, Combretaceae, Thanni, Bark, Allergy due to *Holigarna arnottiana*, bark juice applied over skin.

GGG. Tinospora cordifolia (Willd.) Miers., SNMH491, Menispermaceae, Amruth, stem, Fever, juice 1 ounce taken in thrice a day.

HHH. Vitex negundo L., SNMH495, Verbenaceae, Karinochi, Leaves, Rheumatism, used in making fermented decoction (kashayam).

Sixty user reports regarding fifty seven species used for various ailments were recorded during the study. Conservation strategies regarding sustainable plant use were also recorded. Plants were collected judiciously from the abundant areas only and thus, these tribe practice a sustainable use of herbal resources. Rules from Government officials restricting free entry into wild had changed their life style patterns and have alienated them from their natural habitat. Most of the healers now have to take long walks into the woods for collecting medicines and this has forced them to collect and store plants at least temporarily, for a week's use. Knowledge transmission was highly conservative among the community.

The data presented here was an attempt to document the fast eroding indigenous knowledge which has an evolutionary history of several generations through trial and error methods and has been traditionally transferred orally. In this age of modernaisation where these traditional communities are put in pressure to adapt modern systems of medicine it is high time to preserve them before it is lost forever.

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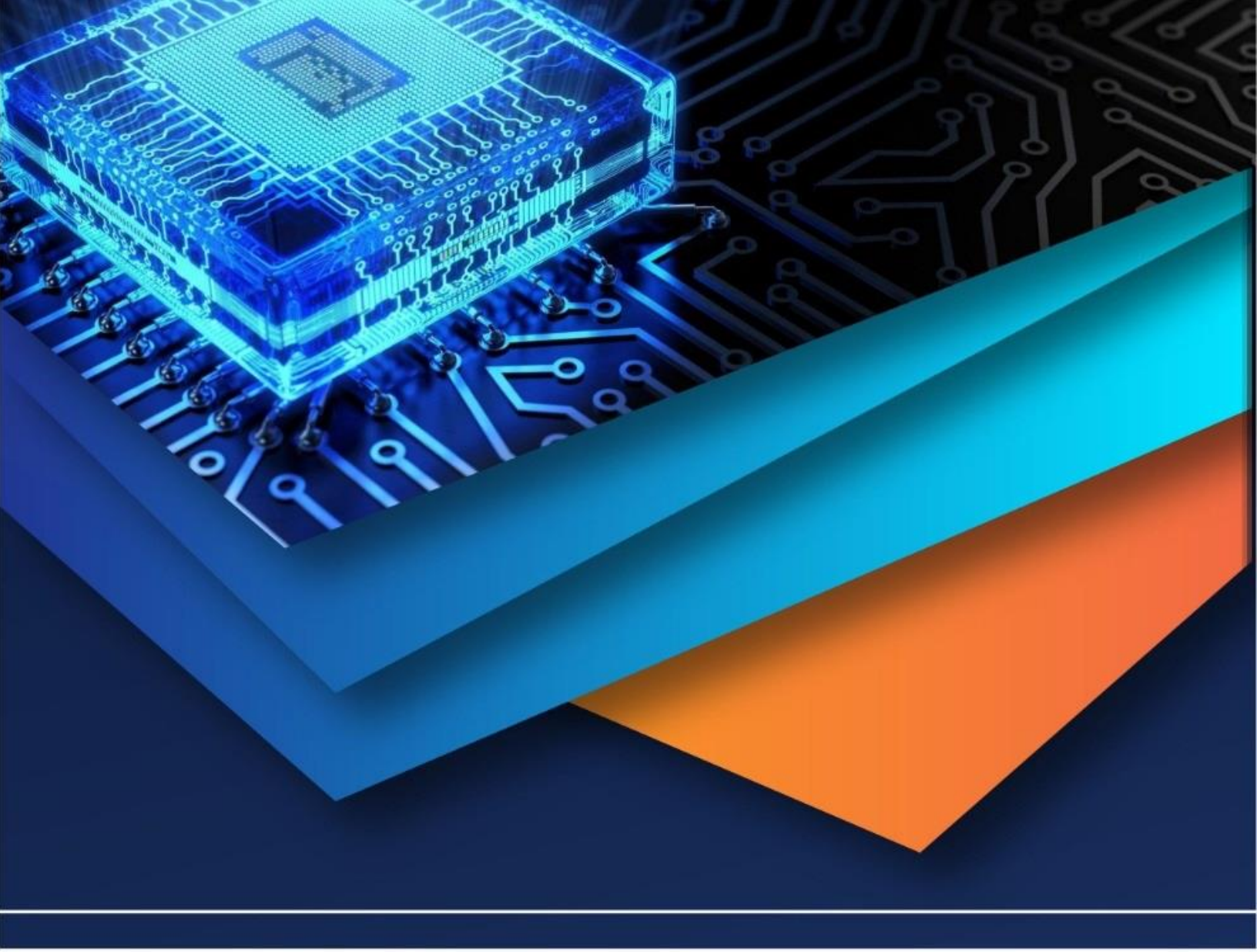
REFERENCES

[1] C. Rodrgues, L. Ascendo, M.A. Bonet and J. Valles, “An ethnobotanical study of medicinal plants and aromatic plants in the natural park of serra de sao mamede(Portugal),” *Journal of Ethnopharmacology*, vol 89, pp. 199-209, 2003.
[2] B.Weldergermia, “Review on the importance of documenting ethnopharmacological information on medicinal plants,” ***Asian Journal of Pharmacy and Pharmacology***, vol *3*(9), pp. 400-403, 2009.
[3] G.T. Prance, “Ethnobotany and the future of conservation,” *Biologist*, vol 47(2), pp.45-68, 2000.
[4] R.T. Trotter and M.H. Logan, Consensus: A new approach for identifying potentially effective medicinal plants, in: Plants in Indigenous Medicine and Diet: Bio behavioral approaches, N.L. Etkin, Ed. Redgrave Publishers, Bedford Hills, New York, pp. 91-112, 1986.
[5] K.J. Young, Ethnobotany. Chelsea house, New York, pp.1-112, 2007.
[6] J.B. Alcorn, Huaestec Mayan Ethnobotany. University Texas Press, Austin. 1984.
[7] J.B. Alcorn,. The scope and aims of Ethnobotany in a developing world. In: R.E. Schultes and V.S. Reis Eds., Ethnobotany: evolution of a discipline, Dioscorides, Portland, pp. 23-35, 1995.
[8] Jain S.K.. “Human aspects of plant diversity,” *Economic botany*, vol 54(4), pp. 459-470, 2000.
[9] C.N Nair, History of Wayanad. In: O.K. Johnny, Ed. Edakkal caves and history of Wayanad. Mathrubhoomi books, Kozhikode, 2008.



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