

## Ethnobotanical Study of Medicinal Plants Used By Malaiyali In Pachaimalai Hills Area Of Trichirappalli District, Tamil Nadu, India

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### ABSTRACTS

The selected study area in Pachaimalai Hills situated in Eastern Ghats of Tamil Nadu, India. The study was aimed to document the traditional folklore knowledge of the local people about the use of different plants or their products. A large number of people belonging to various Hindu Malaiyali groups or races were interviewed during field trips and asked questions regarding the traditional use of medicinal plants. The data collected reveals that about 61 plant species belonging to 38 families find use in day to day life including medicinal, aromatic and cultural. The present study also details the herbal cures for different disorders, based on the information obtained from local herbalists or traditional healers. Then collected the medicinal plants are Enumeration of botanical name, Family, vernacular, common name and plant medicinal used. The common diseases treated by the herbal practitioner were asthma, digestive problems, paralyzes, skin diseases, diabetes, jaundice, fever, rheumatism, piles, stomachache and eye disease.

**Keywords:** Ethnobotany, Medicinal plants, Malaiyali tribe, Pachaimalai hills, Tamil Nadu.

### I. INTRODUCTION

The Indian subcontinent is remarkable for its exceptional level of biological diversity at broad habitat level and within these habitats at species level. About 75 million hectares of the land area in India is forest of various types from dry deciduous to evergreen forests and from alpine to tropical forests (Singh and Viswakarma, 1997). Plants have been used in traditional medicine for several thousand years. The knowledge of medicinal plants has been accumulated in 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 and 100 species of plants serve as regular sources of medicine (Johnson .,et.,al.,2015; Anusha.,et.,al.,2012; Pei, 2001;). These medicines are safe and environment friendly. Nearly 61% of the world population depends upon traditional system of health care (Rajadurai.,et.,al.,2009). Tribals provide considerable information about the use of many plants as medicine. According to the world health organization (WHO) as many as 61% of the world's population depend on traditional medicine for their primary healthcare needs. The present study aims at documenting the tribal use of some of the plants which can prove beneficial for the industry and such plants need to be propagated on large scale to narrow down the ever increasing pressure on these plants. Efforts were made to meet and interact with the elderly people of all these

areas for documentation of the hidden knowledge of plants because traditional healers are believed to provide considerable information about the use of many plants or plant parts as medicine.

### II. MATERIALS AND METHODS

#### Study Area

An ethnobotanical survey was carried out in Pachaimalai Hills, Trichirappalli District, Tamil Nadu, India. Pachaimalai Hill is a part of Eastern Ghats covered with tropical dry deciduous vegetation. The Pachaimalai Hill is situated at 933 meters above the sea level with a total area of 4532.53 ha. It lies latitude 11°09' 00'' and 11°27'00'' North and longitude 78°28'00'' and 78°49'00'' East. The ethnobotanical survey was carried out among local population and the tribe called Malaiyali living in this area. The tribal community was met in their residential areas of particularly there are so many Tribal villages like Thenpuranadu, Vadapuranadu and Aathinadu around Top Senkattupatti (Amarasuriyan et al., 2013). The forest comprises about nine major types i.e. evergreen, semi evergreen, dry mixed deciduous, southern thorn scrub, dry savannah, southern thorn forest and dry grassland (Soosairaj et al., 2007). The soil of these hills ranges from loam to clay loam and is generally reddish brown to dark yellowish brown in color. The soil depth is about a meter and soil reaction is near neutral. The annual rainfall ranges from 610 to 900 mm. These

hills receive maximum rainfall during the months of September, October and November through the Northeast monsoon. The hills receive rainfall in the months of June and August through Southwest monsoon.

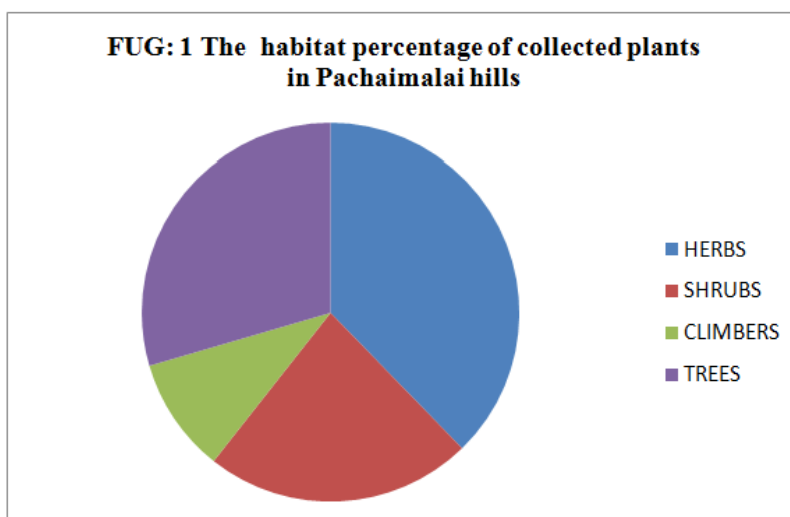
### Data collection

The field visit was conducted several times during the periods of studies September 2015 to March 2016. The survey of Pachaimalai hills, Eastern Ghats of Tamil Nadu. Ethnomedicinal information was gathered from the local Hindu malaiyalis and herbalists, through personal communication, who accompanied as local guides in the field. Each of the plant material was assigned field book number and documented as to scientific name, family, vernacular name (Tamil), common name and medicinal uses, plant parts that were identified as having use in Ethnobotany were collected and compressed. Plant species collected were identified with the help of flora books (Hooker, 1884; Gamble, 1936; Henry et. al., 1987; Matthew, 1983). This medicinal uses decoction, infusion, paste, powder and juice) form of usage with fresh or dried mixture of other plants used as ingredients were also the collected medicinal plants. The more dominant species is *Acalypha indica* L., *Leucas aspera.*, *Datura metal* L., *Eclipta alba.*, *Ficus religiosa* L.

### III. RESULTS AND DISCUSSION

During the present observation and interaction with the village (Malaiyali) dwellers, the herbal medicine practioners and other traditional healers of Pachaimalai Hills. The collected plants are divided into four criteria on the bases habitat of following groups Herbs, Shrubs, Clambers and Tree, herbs have 23spieces, shrubs have 14 species, Climber have only 6 species and trees have 18 species. Hear herbs are occupied 23

species, it have highest number of species in collected plants and climbers occupied only 6 species, it lowest numbers of species in collected plants (Fug- 1). The totally collected 61 plant species belonging to 38 families (Table-1) find use in day to day life including medicinal, aromatic and cultural. The four plants family list of Euphorbiaceae, Lamiaceae, Solanaceae, and Astraceae. The three plants family Malvaceae and Moraceae. The two plants family list of Ascleptaceae, Capparidaceae, Verbinaceae, Poaceae, Lilliacae, Meliaceae and Momosaceae. The finally single family list of Amaranthaceae, Aroideaceae, Rutaceae, Acanthaceae, Annoceae, Pappavaraceae, Aristolachaceae, Nyctaginaceae, Cuttiferaceae, Musaceae, Sapindaceae, Caricaceae, Ceasalpinaceae, Apiaceae, Vitaceae, Apocyanaceae, Convolvulaceae, Rubiaceae, Sapotaceae, Aizoaceae, Cactaceae and Cambretaceae. 61 Angiospermic plants were enumerated with their medicinal importance. Tribal population has good knowledge about the use of many plants. They believe that all afflictions are caused by supernatural forces. They were using these plants to cure diseases like skin problems, body pain, cough, cold, fever, asthma, kidney problem, tonic, stomach problems, ulcer, sore throat and typhoid. So, The Malaiyali tribes of various Nadu shared knowledge of the ethnomedicinal plants to use 'Neenda ayil', which translate to "living long healthy life". The Malaiyalis are also being lives in spiritualism for which they utilize many ethnomedicinal plants. The Most demand of ethnomedicinal plants and have been motivation and conservation of these plant species (Vaidyanathan., et.,al.,2014). Due to more demand of ethnomedicinal plants and more profit, local villagers have been motivated for conservation and cultivation of these plant species.



**Enumeration of Ethnomedicinal plants:**

The plant species are arranged in alphabetical order. Each plant is followed by its scientific name, family, vernacular name (Tamil) and common name, medicinal used. The medicinal

uses are described with details such as the part(s) used singly, combination with other ingredients or mixed with other plants, methods of preparation and mode of administration. The following is the list of 61 plants studied.

**Table-1:** study in medicinal plants in Pachaimalai hills, Eastern ghats, Tamil Nadu, India.

S.No	Botanical Name	Family	Vernacular name	common name	Medicinal Used And parts
1	<i>Abutilon indicum</i> L.	Malvaceae	Thuthi	Indian abutilon	Roots and leaves decoction is given for diuretic and purgative. The leaf paste is used in toothache.
2	<i>Acacia leucophloea</i> Willd.	Mimosaceae	Vel – Velam	White Bark Acacia	Leaf juice is given to treat fever and stomachache. Leaf juice 50ml mixed with cow's milk used to bleeding piles.
3	<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimeni	Indian accalypha	The whole plant powder is used in toothache. The leaf paste is applied on bed-sores.
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Nayuruvi.	Include cadillo chichoborugo	Leaves decoction taken orally with water in stomach problems, diuretic, rheumatism and skin diseases.
5	<i>Acorus calamus</i> L.	Aroideae	Vashambu	Calamus , rat root	Decoction of the rhizome is taken internally to treat dyspepsia, asthma and diarrhoea.
6	<i>Aegle marmelos</i> L.	Rutaceae	Vilvam	Bael	Decoction of the fruit is used as dysentery and dyspepsia. Decoction of the stem and root powder of the plant would cure fever.
7	<i>Alangium salviifolium</i> L.f.	Alangiaceae	Alangi	Sage Leaved Alangium	Decoction of root and bark powder is taken orally with water/milk to Cure fever
8	<i>Aloe barbedensis</i> Mill.	Liliaceae	Gheekunvar	Aloe vera	The juice of the whole plant is taken as remedy for jaundice, fever, rheumatism and piles.
9	<i>Andrographis echinoides</i> Nees.	Acanthaceae	Gopuramthangi	False Waterwillow	Juice of leaves taken orally in antipyretic, anthelmintic and stomachache problems.
10	<i>Andrographis paniculata</i> Nees	Acanthaceae	Nilavembu	Green chirayta	Decoction of the leaves is taken to treat dyspepsia, and stomachache.
11	<i>Anisomeles malabarica</i> R.Br.	Lamiaceae	Siriyapaeyamarati	Malabar catmint	Leaf juice used in fever and stomachache.
12	<i>Annona reticulata</i> L.	Annonaceae	Ram-sitapalam	Custard Apple	Fruit juice given orally as vermifuge.
13	<i>Argemone mexicana</i> L.	Papaveraceae	Perammathandu	Amapolas del Campo	The leaf decoction is given in ulcers and malarial fever.
14	<i>Aristolochia bracteata</i> Retz	Aristolochiaceae	Aduthinnapai	Dutchman's pipe	Decoction of the whole plant mixed with castor oil, which cures fever and worms.
15	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Vembu	Neem tree, Nim, Margosa Tree	Leaf juice is given internally in fever.
16	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Kaaghitapoo	Great Bougainvillea	Roots are used in cough and fever.
17	<i>Cadaba indica</i> Lam	Capparidaceae	Viluthi	Dabi	The leaf and flowers of 50ml juice mixed with castor oil and turmeric is taken as remedy for menorrhagia, purgative and syphilis.
18	<i>Calophyllum inophyllum</i> L.	Cuttiferaceae	Punnaivirai	Beauty Leaf	Fresh bark juice is taken for eye disease.
19	<i>Calotropis gigantea</i> (L) R.Br.	Asclepiadaceae	Erukku	Crown flower	The plant powder mixed with cow's milk it is used as a leprosy, syphilis, ulcer, dysentery, diarrhoea and rheumatism.
20	<i>Canna indica</i> L.	Musaceae	Kalvazhai	Wild canna lily, canna	The rhizome and fresh fruit of juice mixed with water to drink which cure fever, drowsy and dyspepsia.
21	<i>Cardiospermum luridum</i> L.	Sapindaceae	Moddacoatan	Balloon Vine, Heart-seed	The whole plant powder mixed with goat's milk to drink which cure snake bite
22	<i>Carica papaya</i> L.	Caricaceae	Pappali	Papaya	Fruit decoction used in blood pressure.
23	<i>Cassia auriculata</i> L.	Caesalpiniaceae	Avarai	Aadari Simbi	Leaves juice used in heart diseases and eye troubles.
24	<i>Centella asiatica</i> Urban.	Apiaceae	Vallarai	Indian pennywort, Brahmi	Leaf Juice is given to improve memory and youth.
25	<i>Chloris barbata</i> SW.	Poaceae	Grass	Swollen finger grass	Leaves paste applied externally in skin diseases.
26	<i>Cissus quadrangularis</i> L.	Vitaceae	Perandai	Veldt Grape	Plant extract taken orally in skin diseases.
27	<i>Cleome viscosa</i> L.	Capparidaceae	Nayi-velai	Yellow mesambay	Seed paste taken orally with hot water in anthelmintic and liver complaints.
28	<i>Coccinia indica</i> W.	Cucurbitaceae	Kovai	kovakkai and tindora	Leaf juice is mixed with honey and given for diabetes and bronchitis.
29	<i>Cyanodon dactylon</i> Pers	Poaceae	Arugampullu	Bermuda grass manienie	Decoctions of plant are given in diabetes, chronic ulcers and promote coolness.
30	<i>Datura metal</i> L.	Solanaceae	Umathai	Thorn Apple and Angel's Trumpet	Juice of leaves is used in antispasmodic, asthma and chronic ulcers.
31	<i>Eclipta alba</i> Hassk	Asteraceae	Karishalanganni	Eclipta	Decoction of leaves used in tonic, jaundice and skin diseases
32	<i>Emblica officinalis</i> Gaerth.	Euphorbiaceae	Nellikai	Gooseberry and Phyllanthus Emblica	The leaf juice mixed with black pepper and drink to treat scorpion sting.
33	<i>Ervatamia coronaria</i> Steapf.	Apocynaceae	Nandhiyavatai	Crepe jasmine	Decoction of the roots is a taken as alterative.
34	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Ammampachcharisi	Asthma plant	Crushed leaves mixed with goat's milk used in dysentery, diarrhoea and asthma.

35	<i>Evolvulus alsinoides</i> L.	Convolvulaceae	Vishnukaranti	Dwarf Morning-glory	The whole plant powder mixed with hot water to drink which cure syphilis, diarrhoea, dysentery and nervous debility.
36	<i>Ficus benghalensis</i> L.	Moraceae	Alamaram	Banyan Tree	Latex is applied on sores, ulcers and rheumatism.
37	<i>Ficus glomerata</i> Roxb.	Moraceae	Atti	Gular and Doomar	Seed powder mixed with honey, which cures diabetes and dysentery.
38	<i>Ficus religiosa</i> L.	Moraceae	Arashamaram	Bo-tree and Pipal	Leaves in the form of paste are applied in skin diseases.
39	<i>Gloriosa superba</i> L.	Liliaceae	Kalappai Kilangu	flame lily, glory lily and climbing lily	Tubers are ground and a half glass of the tuber juice is mixed with goat's milk and taken orally to treat leprosy, gonorrhoea and piles.
40	<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Shiru-kurunja	Gurmar, Merasingi	The juice of the leaves is used to cure urinary complaints and diabetes.
41	<i>Hibiscus abelmoschus</i> L.	Malvaceae	Kasturi vendai	Musk Seed	Paste of flower is used for skin diseases.
42	<i>Kora coccinia</i> L.	Rubiaceae	Vitche	Jungle Geranium	The flowers and root of juice mixed with sugar is used to cure diarrhoea, fever and dysentery.
43	<i>Leucas aspera</i> Spreng	Lamiaceae	Thumbai	Leucas	The leaf juice mixed with water which is taken as a cooling medicine for scabies.
44	<i>Lippia nodiflora</i> Mich.	Verbinaceae	Poduthalai	Frogfruit	The decoction of the plant is used to cure astringent and diarrhoea.
45	<i>Melia azedarach</i> L.	Meliaceae	Mallayvembu	Chinaberry tree and Persian lilac	The leaf paste is applied externally to cure leprosy, skin diseases and nervous disorders.
46	<i>Mimusops elengi</i> L.	Sapotaceae	Maghizham	Spanish cherry	The decoction of bark, fruit and seeds are used in tonic, fever, diarrhoea and headache.
47	<i>Mimosa pudica</i> L.	Mimosaceae	Thottalsurungi	Sensitive- Plant	Paste of leaves is used to apply on nose and chest to cure cold and cough.
48	<i>Mollugo micidalis</i> Lam.	Aizoaceae	Siriyapaeyamarati	Thread stem carpetweed	Leaf juice is and antiseptic given to earache.
49	<i>Ocimum basilicum</i> L.	Lamiaceae	Thirunetrupachilai	Sweet Basil and Common Basil	Leaf juice is used in urinary problems.
50	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulasi	Holy Basil, Tusli, Tulasi and Madura-tala	The juice of the leaves is used in fever, leprosy and cough.
51	<i>Opuntia dillenii</i> Haw.	Cactaceae	Sappathikali	Figueira-da-india.	The fruits are used in gonorrhoea.
52	<i>Phyllanthus anarus</i> L.	Euphorbiaceae	Kizhanelli.	Gale-o-Wind and Hurricane weed	whole plant mixed with sugar is taken as remedy for jaundice and liver complaints.
53	<i>Sida acuta</i> Burm.	Malvaceae	Vathathiruppi	Spinyhead sida	Fresh root is crushed with black pepper and is taken orally once daily for 5-7 days to cure antipyretic, diuretic and gonorrhoea.
54	<i>Solanum nigrum</i> L.	Solanaceae	Manattakkali.	Black nightshade; wonder berry.	The leaf and flowers of juice mixed with salt and black pepper to drink which cure skin diseases, piles and ulcer.
55	<i>Solanum trilobatum</i> L.	Solanaceae	Thuthuvalai	Achuda	Juice extracted from crushed leaves is used asthma and lung diseases.
56	<i>Sonchus oleraces</i> L.	Asteraceae	Karpooravalli	Milk Thistle	Leaf paste is applied twice a day to heal wounds until cure.
57	<i>Terminalia chebula</i> Retz.	Combretaceae	Kadukkai	Chebolic	Decoction of seed is taken orally along with 100 ml of milk twice a day for 2 days to get relief from Digestive disorders.
58	<i>Tridax procumbens</i> L.	Asteraceae	Vettukaya poondu	Tridax	Paste of leaves and root is applied topically to treat wound.
59	<i>Vernonia cinerea</i> (L.) Less	Asteraceae	Mukuthipundu	French bouton violet	The whole plant is used as anthelmintic, alterative and skin disease.
60	<i>Vitex nugundo</i> L.	Verbinaceae	Notchi	Chaste tree	Leaf juice is given to vermifuge.
61	<i>Withania somnifera</i> Dun.	Solanaceae	Amukramkizhangu	Ashagwanda	The root powder mixed with black pepper used in rheumatic swellings.

#### IV. CONCLUSION

The people of Pachaimalai Hills, Tamil Nadu has been using numerous herbs of therapeutic purpose since time immemorial. Villagers chiefly depend on the herbs for all diseases. They are aware of the plant remedies for common ailments like diarrhea, jaundice, rheumatism, dyspepsia, asthma, diabetes, dysentery, antipyretic, gonorrhoea and skin diseases.

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#### REFERENCE

- [1]. Anusha Bhaskar and Lalit R. Samant.,(2012)., Traditional Medication of Pachamalai Hills, Tamilnadu, India., Global Journal of Pharmacology 6 (1): 47-51, 2012.
- [2]. C. Amarasuriyan, K. Raju, A. Raja and V. Kadirvelmurugan (2013). Traditional Herbal Remedies among the Tribes of

- Malayali of Pachaimalai Hills of Eastern Ghats, Trichirappalli District, Tamilnadu. *Journal of Basic and Applied Biology*, Vol. 7, No.1, 2013, pp. 311 – 316.
- [3]. Gamble, J.S. (1936). *Flora of the Presidency of Madras. Vol.I-III Allard & Co. London. (Reprinted - 1956) Botanical Survey of India, Calcutta.*
- [4]. Henry, A., N.Kumari, G.R. and Chitra, V. (1987). *Flora of Tamil Nadu, India, Series 1: Analysis Botanical Survey of India, Southern Circle, Coimbatore.*
- [5]. Hooker, J.D.(1884). *The Flora of British India, L. Reeve and Co kent.*
- [6]. M. Johnson Gritto, V. Nandagopalan, A. Doss.,(2015) *Ethno-botanical study on the traditional healers in Pachaimalai hills of Eastern Ghats, Tamilnadu, South India., Journal of Medicinal Plants Studies ; 3(2): 61-85.*
- [7]. M. Rajadurai, V.G. Vidhya, M. Ramya and Anusha Bhaskar.,(2009), *Ethno-medicinal Plants Used by the Traditional Healers of Pachamalai Hills, Tamilnadu, India, Ethno-Med, 3(1): 39-41.*
- [8]. Matthew, K.M. (1983). *The Flora of Tamilnadu Carnatic. The Rapinat Herbarium, Tiruchirapalli, Tamilnadu, India.*
- [9]. Pei, S.J., **2001**. *Ethnobotanical approaches of traditional medicine studies: some experiences from Asia. Pharmaceutical Biology, 39: 74-79.*
- [10]. Singh, M.P. and V. Viswakarama, 1997. *Forest Environment and Biodiversity. Daya Publishing House, New Delhi. p. 427.*
- [11]. Soosairaj, S., Britto, J.S., Balaguru, B., Nagamurugan, N., Nataranjan, D. 2007. *Zonation of conservation Priority sites for effective management of tropical forests in India. A value- Based conservation Approach". Applied Ecology and Environmental Research, 5: 37-48.*
- [12]. Vaidyanathan D., M. S. Salai Senthilkumar, N. Sisubalan and M. Ghouse Basha.,(2014), *Studies on ethnomedicinal plants used by Malayali Gounder Tribes in Pachamalai of Eastern ghats, Tamil Nadu, India., Advances in Applied Science Research, 2014, 5(1):244-253.*
- [13]. Anonymous. *Wealth of India-Raw materials, , council for scientific and industrial Research, New Delhi, India, 1992, volumes 1-9.*