

Original Research Article

Ethno-medicinal Study of Malayali Tribe in Jawaduhills, Thiruvannamalai District, Tamil Nadu, South India

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Abstract: In the present investigation deals with the use of medicinal plants for various ailments by Malayali tribes living in Jawaduhills, Thiruvannamalai District, Tamil Nadu, India. One hundred and eighty six Malayali tribes were selected for investigation using questionnaire, discussions, and personal interviews during regular field trips. The ethno-botanical survey was carried out in the Malayali population residing in this area during the period of 2013 to 2015. The findings of the study results reveal that the identification of 89 medicinal plants species belonging to 42 families and 20 genera has documented. The plant species used to cure heart attack, diabetics, tuberculosis, ulcer, snake bites, headache, cold, cough, skin diseases, dental problems, wounds and fever etc. The indigenous knowledge available with these people plays an important role in quick and proper identification of natural resources. The study revealed that about 89 species and their scientific name, family, vernacular name (Tamil), parts used, mode of preparation and medicinal uses were documented. To acquire raw plant materials using ethno-botanical field interviews as starting point to discover new bioactive compounds from medicinal plants. The research show the ways for further investigation in the field of pharmacology and Ethno botany etc.

Keywords: Ethno botany, Malayali tribes, Jawadhu hills, Ethno botanical knowledge, Ethnomedicine.

INTRODUCTION

Ethno-botany is the study of how the people of a particular culture and regions makes the use of indigenous plants/while the ethno botanist explores how plants are used for food, shelter, medicine, clothing hunting and religious ceremonies. It is the relationship between a given society and its environment and in particular the plant world[1]. Ethnobotany allows interaction between researchers with the local people that have the knowledge about use of plants. These people manage and conserve significant amounts of biological resources useful for industry and world community[2].

India is rich in ethnic diversity and traditional knowledge that has resulted in a considerable body of ethno botanical research. There are over 537 different aboriginal groups in India with widespread knowledge of plants [3]. Traditional system of medicines has been in use over thousands of years in India. Significant contributions have been made by its practitioners particularly the primary health care providers at the community levels [12]. Plants have been used traditional medicine for several thousand years [4]. 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[5]. Over the last century, ethno-botany has evolved into a specific discipline that looks at the people plant relationship in a multidisciplinary manner such as ecology, economic botany, pharmacology and public health [6].

Tribes in Tamilnadu

In India there are 537 ethnic groups. In Tamilnadu there are 36 Scheduled tribes such as Adiyar, Aranadan, Eravanan, Irular, Kadar, Kommaa, Kanikaran, Kannikar, Kaniyan, Kanyan, Kattunayakan, Kochu, Velan, Konda Kapns, Konda reddy, Koraga, Kota Kudiva, Melakudl, Kurichchan, Kurimbas, Kurumanas, Maha Malassar, Malai Arajan, Malaivedan, Malakkuravan, Malayali, Malassar, Malaye Kandi, Mannan, Mudugar, Mauduvan, Muthuvan, Palleyan, Palliyar, Palliyar, Paniyan and Sholaga Toda[7]. Most of the tribal communities are small in size and the exceptions are malayali and Irular tribes. Majority of the tribal population in Tamil Nadu lives hilly ranges viz., Eastern Ghats, Western Ghats and discontinuous hill tracts adjoining the plains and the hills.

Malayali Tribes

Malayalis (Mala = **hill**, Ali = **dwells or inhabits**) were believed to have migrated from kanchipuram. There is no unique opinion about the region of the malayali tribe. Evidences regarding the movement of malayali tribal to the jawadhu hills were from Kanchipuram during the pallava period. The myths connected to the migration of malayali tribe into jawadhu hills have been described by Thurston [8]. Actually these were the descriptions of some of the heredity leaders like 'Pattakaran' Sathigoundan and kangani. They are Tamil speaking hill tribes and all are mostly agriculturist. Their pure population can be seen in Kollihills, Yercaud, Jawaduhills, Yelagiri, and Bodemalai. According to Thurston the word Malayali means the inhabitants of hills. Malayali is one of the 36 scheduled tribes of tamilnadu and the population of malayali tribes' forms around 54% of total schedule tribe population of tamilnadu. Most of the malayali tribes have general knowledge of medicinal plants that are used for first aid remedies to various ailments.

MATERIALS AND METHODS

Tamilnadu is situated in southern end of India, East of Kerala and south of Andhra Pradesh and Karnataka states. Thiruvannamalai district is the 23rd district of the state of Tamil Nadu. The district comprises of 10 taluks. The area of investigation Jawathu hills is located at Thiruvannamalai and Vellore district. Half part of the Jawadhu hills is in Thiruvannamalai district and the other half part is in Vellore district. The Jawaduhill complex comprises a range of hills running from the North to the South attaining a maximum length of 64 kms, and a width of 25 kms, and within the taluks of Polur, Thiruppattur, Chengam, Vaniyambadi, and Vellore. Geographically the hills lies between 12° - 24° N and 12° - 55° N North latitude and 78° - 35° N of East longitude. The hill has an area of 150 kms and a population of 51,999 (98% tribals and others 2%) Population density of the hills is 358 people/sq.km. The study area comprises 11 Panchayat unions namely Kovilur, Thenmalai Athipattu, Kanamalai, Kallathur, Melsilambadi, Nammiyampattu, Palamarathur, Puliyur, Kuttakarai, Veerapanur and Urgoundanur. The study area is bounded on the East of Polur (43 Kms), on the West of Amirthi (33Kms), and

on the North of Allangayam (25 Kms) in Thiruvannamalai district and a part of the Eastern Ghats. The beautiful mountain lies at about 2315 to 3000 mts at the sea level. Temperature varies with in the altitude and ranged from 11°C to 44°C. The maximum temperature raises to in May 44°C and minimum lies at 11°C. The area is well known for excessive rainfall (≥ 1100 mm) and dry months are rare. The relative humidity remains high varies from 40 to 85 %.

The ethno botanical survey was carried out during 2013 to 2015 and all the information's were gathered from the local traditional healers and Malayali tribals. In this information's have been collected in the questionnaires, discussions, and personal interviewed during regular field trips with knowledgeable elder people under the age group of 40 to 90 years. Jawaduhills malayali tribes collecting medicinal plants from different places like Thenmalai Athipattu, Kanamalai, Kallathur, Melsilambadi, Nammiyampattu, Palamarathur, Puliyur, Kuttakarai, Veerapanur and Urgoundanur forest. Ethno medicinal plants were collected and botanically identified using the floras of Presidency of Madras [9] and the Flora of Tamilnadu Carnatic [10] and Plant Resources of Thiruvannamalai districts [11]. Voucher specimens are deposited at the Department of Botany, M.R Government Arts College, Mannargudi, and Thiruvarur District.

RESULTS AND DISCUSSION

In the present investigation were records medicinal plants used by the Malayali tribe of Jawaduhills. Most of the drugs prepared from the wild plants. It was observed that 89 traditional medicinal plants belonging to 42 families were used by the tribal people. The common preparations were paste, juice, decoction and powder for management of various ailments as medicines. The plants are arranged alphabetically by botanical name, local name (in Tamil), family, and detailed ethno medicinal uses in the following enumeration (Table1). Irular tribes' practitioners are using these plants to cures fever, cold, cough, skin problems, dental problems, wounds, jaundice, heart attack, asthmatic problems, scabies, measles and headache etc.

Table 1: Medicinal plants used for the treatment of various diseases by local people of Malayali Tribe

S. No	Botanical name	Family	Local Name	Habit	Parts used	Ethno medicinal uses
1	<i>Abutilon indicum</i> (L) Sweet.	Malvaceae	Thuthi	Shrub	Leaves	Fever, allergy, piles, Chest pain.
2	<i>Acalypha fruticosa</i> Forsskal..	Euphorbiaceae	Chinni	Shrub	Leaves	Menstrual problems and Leprosy
3	<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimaeni	Herb	Whole plant	Cold, cough, skin diseases, poison

						killer for insect bites
4	<i>Acacia arabica</i> (Lam) Muhl. Ex Willd.	Mimosaceae	Karuvelamaram	Tree	Leaves	Dysentery and diarrhoea.
5	<i>Achyranthes aspera</i> L	Amaranthaceae	Naaiyuruvi	Herb	Whole plant	Ringworm, Dog bite, teeth problems, mouth and dental related troubles.
6	<i>Acorus calamus</i> L.	Araceae	Vasambu	Herb	Rhizome	Indigestion problems
7	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Adaadhodai	Shrub	Leaves	Cold, cough, Sinus problems and joint pains.
8	<i>Aegle marmelos</i> (L) corr.	Rutaceae	Vilvam	Tree	Leaves	Male infertility problems.
9	<i>Aloe vera</i> (L) Burm.f.	Liliaceae	Chotthu Katthaalai	Herb	Leaves	Body heat and ulcer and skin problems.
10	<i>Andrographis alata</i> (Vahl) Nees.	Acanthaceae	Peria nangai	Shrub	Leaves	Liver diseases jaundice Heart palpitation.
11	<i>Andrographis paniculata</i> (Burm.f).Nees.	Acanthaceae	Nila vaambu	Shrub	Leaves	Snake bite, Scorpion bites, poisonous bites and diabetics.
12	<i>Argemone Mexicana</i> L.	Papaveraceae	Pirama thandu	Herb	Leaves	Jaundice, Leprosy toothache.
13	<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	Adutheendaapalai	Herb	Root	Syphilis, Skin diseases
14	<i>Artocarpus integrifolius</i> L.f.	Moraceae	Palaa	Tree	Stem	Toothbrush.
15	<i>Asparagus racemosus</i> Willd.	Liliaceae	Thanneer vittaankizhangu	Climber	Root	Diabetes
16	<i>Avera lanata</i> (L.) Juss	Amaranthaceae	Poolapoo	Herb	Leaves	Kidney stone
17	<i>Azadirachta indica</i> A.Juss	Meliaceae	Veppan	Tree	Leaves	Chicken pox, Measles.
18	<i>Barleria prionitis</i> L.	Acanthaceae	Semmuli	Sub shrub	Leaves	Toothache
19	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Mookkaratti	Herb	Root	Jaundice and Kidney problems
20	<i>Calotropis gigantea</i> (L.) R. Br	Asclepidaceae	Yerukku	Shrub	Flower	Snake bite, Cold, Asthma
21	<i>Catharanthus roseus</i> (L) Don.	Apocynaceae	Nithyakalyani	Herb	Flower	Diabetes.
22	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakkathan	Climber	Whole plant	Dysentery and Rheumatic problems.
23	<i>Cassia auriculata</i> , L	Fabaceae	Avaram	Tree	Flower	Heart pain.
24	<i>Centella asiatica</i> (L) Urban.	Apeaceae	Vallarai	Herb	Leaves	wounds
25	<i>Cissus quadrangularis</i> , L	Vitaceae	Perandai	Shrub	Stem	Joints pains, body pains and Asthma.

26	<i>Citrus aurantifolia</i> , L	Rutaceae	Elumichai	Tree	Fruits	indigestion and body heat
27	<i>Cocos nucifera</i> L.	Arecaceae	Thennai	Tree	Fruits	Body heat, Intestinal worms.
28	<i>Coccinia indica</i> , L	Cucurbitaceae	Kovai	Climber	Leaves	Diarrhoea, ulcer.
29	<i>Coleus aromaticus</i> Benth.	Lamiaceae	Karpuravalli	Herb	Leaves	Cold, Cough, Headache Asthma and Tuberculosis.
30	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanavaazhai	Herb	Leaves	Blood vomiting, Indigestion problems
31	<i>Curcuma langa</i> , L	Zingiberaceae	Manjal	Herb	Rhizome	Skin inflammation, Wounds, Chicken pox, Measles and Scabies.
32	<i>Cyanodon dactylon</i> (L) pers	Poaceae	Arugampule	Herb	Leaves	Ulcer and blood purification. digestive problems
33	<i>Cyclea peltata</i> Diels.	Menispermaceae	Senthil Kodi	Climber	Stem	Fever
34	<i>Cyperus rotundus</i> L.	Cyperaceae	Koorai	Herb	Root	Digestive problems
35	<i>Datura fastuosa</i> L.	Solanaceae	Karu Oomatthai	Herb	Flower	gonorrhoea, abnormal menstruation problems, and Barrenness or infertility
36	<i>Darura metal</i> L.	Solanaceae	Oomatthai	Herb	Leaves	Blisters, Swellings
37	<i>Delonix elata</i> (L) Gamble	Fabaceae	Vathanarayan i	Tree	Leaves	Joint pain, body pains.
38	<i>Eclipta prostrate</i> L.	Asteraceae	karisilaangan ni	Herb	Whole plant	Increases hair growth
39	<i>Erythrina indica</i> Lam.	Fabaceae	Kaliyana murunkkai	Tree	Leaves	Joints pains, body pains and rheumatism.
40	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Ammanpacharisi	Herb	Whole plant	Snake bites.
41	<i>Ficus benghalensis</i> L.	Moraceae	Aala maram	Tree	Stem bark	Diarrhoea, Dandruff and Cracks on the foot.
42	<i>Ficus racemosa</i> L	Moraceae	Atthi	Tree	Latex	Mouth ulcer, Diarrhoea and dysentery.
43	<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Sirukurinchan	Twinning shrub	Root	Toothache
44	<i>Gloria superba</i> L.	Liliaceae	Kannuvalikodi	Climber	Tuberous root	Leprosy, Piles, Chronic ulcers
45	<i>Hemidesmus indicus</i> (L) R.Br.	Asclepiadaceae	Nannaari	Twinning shrub	Leaves	Scabies, skin disease and body cooling.
46	<i>Heliotropium indicum</i>	Boraginaceae	Thael	Sub	Leaves	Ringworm, Pimples

	L.		kodukkau poondu	shurbby		problems
47	Hibiscus rosasinensis, L	Malvaceae	Semparuthi	Shrub	Flower	Dental problems, mouth related problems, Venereal disease, Arterial hypertension, Anti fertility,
48	Ionidium suffrutifolium DC.	Violaceae	Oorelai thamarai	Herb	Whole plant	Sexual debility, infertility, menstrual disorders, gonorrhoea and nervous problems.
49	Ipomoea batatas (L) Lam.	Convolvulaceae	Sakaraivalli	Herb	Tuberous root	Stomach upset, Digestion troubles
50	Ipomoea staphylina Roemer & Schultes	Convolvulaceae	Oonankodi	Climber	Latex	Foot crack and applied externally for healing wounds
51	Ixora coccinea, L	Rubiaceae	Idlipoo	Shrub	Flower	Eczema
52	Jatropha curcas L.	Euphorbiaceae	Kattamanakku	Shrub	Leaves	Scabies, Ringworm infection
53	Justica acaulis L.	Acanthaceae	Nilakadambu	Herb	Leaves	Ringworm infection
54	Leucas aspera Link,	Lamiaceae	Thumbai	Herb	Leaves	Snakebite and scorpion bite.
55	Lycopersicon esculentum Miller.	Solanaceae	Thakkaali	Herb	Root	Dental problems
56	Melia dubia Cav.	Meliaceae	Malai vembu	Tree	Flowers	Diabetes
57	Melothria maderaspatana (L.)Cogn.	Cucurbitaceae	Musumusukkai	Climber	Leaves	Asthma, wheezing problem and tuberculosis.
58	Mimosa pudica L.	Fabaceae	Thottaar sinungai	Herb	Leaves	Leprosy, Anti fertility, wounds.
59	Mimusops elengi L	Sapotaceae	Magliam	Tree	Leaves	Dental diseases.
60	Momordica charantia L.	Cucurbitaceae	Paaharkaai	Climber	Fruits	Reduce blood sugar level.
61	Morinda tinctoria Roxb.	Rubiaceae	Nuna	Tree	Leaves	Diarrhoea, stomach ache.
62	Moringa oleifera Lam.	Moringaceae	Murungai	Tree	Leaves	Male infertility problems, body cooling.
63	Ocimum basilicum L.	Lamiaceae	Karunthulasi	Shrub	Leaves	Eczema, Scabies.
64	Ocimum canum Sims.	Lamiaceae	Naai Thulasi	Herb	Leaves	Ulcer
65	Ocimum gratissimum L.	Lamiaceae	Elumicchan Thulasi	Shrub	Leaves	Rheumatism, Paralysis and Headache
66	Ocimum tenuiflorum L.	Lamiaceae	Nalla Thulasi	Shrub	Leaves	Cold, tuberculosis and poisonous bites.
67	Pergularia daemia, Forssk	Asclepiadaceae	Uthamani kodi	Climber	Leaves	Chicken pox, measles and body pains.
68	Phyllanthus amarus Schum. & Thonn	Euphorbiaceae	Kizhaa nelli	Herb	Leaves	Diabetics and Body cooling.

69	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Nelli	Tree	Fruits	Itching, Psoriasis
70	<i>Psidium guajava</i> L.	Myrtaceae	Koyyaa	Tree	Leaves	Dysentery, stomach problems.
71	<i>Pterocarpus marsupium</i> Roxb.	Fabaceae	Vaengai	Tree	Bark	Scabies, Ringworm
72	<i>Punica granatum</i> L.	Punicaceae	Maathulai	Tree	Fruits	Diarrhoea
73	<i>Ricinus communis</i> L.	Euphorbiaceae	Aamanakku	Shrub	Leaves	Blisters
74	<i>Santalum album</i> L.	Santalaceae	Sandhanam	Tree	Leaves	Cold and headache
75	<i>Sesbania grandiflora</i> (L) Poiret	Fabaceae	Agathi	Tree	Leaves	Mouth ulcer
76	<i>Sida cordifolia</i> , L.	Malvaceae	Siruthuthi	Herb	Leaves	Asthma, wheezing problem and wound healing activity.
77	<i>Solanum nigrum</i> L.	Solanaceae	Manathakkalli	Herb	Leaves	Diabetes, Stomach pain.
78	<i>Solanum torvum</i>	Solanaceae	Sundai	Shrub	Fruits	Infusion for the enlargement of spleen
79	<i>Solanum trilobatum</i> L.	Solanaceae	Thudhuvelai	Climber	Leaves	Cough, fever, joints pains, body pains, rheumatism and ear problems.
80	<i>Solanum xanthocarpum</i> Schrader & Wendal	Solanaceae	Kandankathiri	Sub shrub	Fruit	Toothache
81	<i>Spermaceoce hispida</i> L.	Rubiaceae	Natthai choori	Herb	Leaves	Diabetes
82	<i>Strychnos nux-vomica</i>	Loganiaceae	Yetti	Tree	Fruits	Body pain, Joint pain. Nervous problems
83	<i>Syzygium cumini</i> (L) Skeels.	Myrtaceae	Naaval	Tree	Fruits	Diabetes
84	<i>Terminalia chebula</i> Retz.	Combretaceae	Kadukkai	Tree	Fruits	Snake bite.
85	<i>Thespesia populnea</i> (L) Correa.	Malvaceae	Poovarasam	Tree	Flowers	Skin disease, Joint pains, Psoriasis, Scabies.
86	<i>Vitex negundo</i> L.	Verbenaceae	Nochchi	Shrub	Leaves	Asthmatic complaints, poison killer, cold, cough, fever and headache.
87	<i>Wedelia chinensis</i> (Osbeck) Merr.	Asteraceae	Manjal Karisalankanni	Herb	Leaves	Jaundice and liver problems.
88	<i>Withania somnifera</i> (L.) Dunal.	Solanaceae	Ashwagandha	Sub shrubby	Root	Asthma, hypertension problem and nervous problem and male infertility.
89	<i>Zingiber officinale</i> Rosco.	Zingiberaceae	Inchi	Herb	Rhizome	Cold, cough and throat pain.

The dominant families with more number of medicinal plants in the present study are Solanaceae and Euphorbiaceae with 7 species and it was followed by Lamiaceae with 6 species and Acanthaceae with 5 species. The rest are represented with one species each family.

Life forms

In the present study there are many plant habit used for preparing ethno medicines. According to the present study herbs (35.95 %) are used dominantly followed by trees (28.08 %), Shrubs (24.71%) and Climbers (Fig.1).

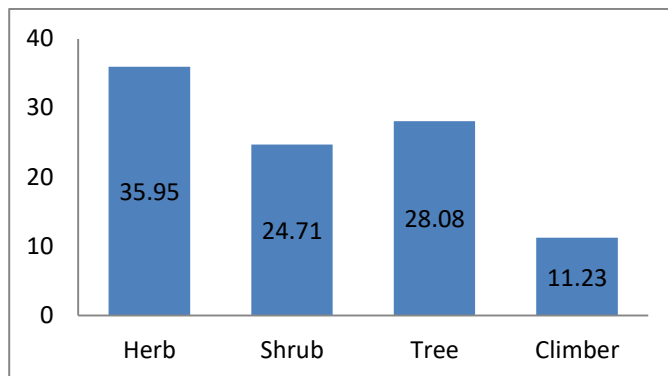


Fig 1: Life forms of collected ethnomedicinal plants

Plants parts used

In the present investigation there are different plant parts used for the preparation medicine, leaves (51.6%) were found to be the most frequently used plant parts in the preparation of medicine followed by fruits and flower (11.2%), roots (10.1%), whole plant

parts (6.74%), Rhizome and stem (3.37%), stem bark and latex, (2.24%) (Fig.3). the leaves and fruits are the two major plant parts which are frequently used for the treatment of various diseases by the malayali tribe of Jawaduhills.

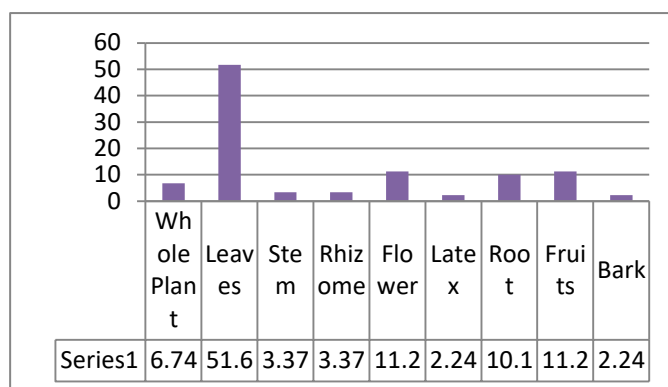


Fig 2: Analysis of plant parts used for preparation of medicine

CONCLUSION

Present study reveals that the Malayali tribe traditional healers of Jawaduhills, Tamilnadu are rich in ethno-medicinal knowledge and plant species dealing with common health problems such as cough, cold, fever, diarrhoea, dysentery, heart attack, shank bites, urinary troubles, diabetes, asthma and jaundice etc. A few interesting observation made in the present study are the use of *Gymnema sylvestre* for Heart attack, *Andrographis paniculata* and *Leucas aspera* for snake bites, *Melothria maderasaspata* for tuberculosis, *Datura fastulosa*, *Ionidium suffrutifolium* and *Melia azedarach* for Barrenness or Infertility problems. The present study indicates many of the species are medicinal plants. Other plants are mainly used for commercial purposes. Most of the medicinal plants are

growing in wild condition. The medicinal plants of Jawaduhills are to be studied systematically so that their therapeutic virtues can be fully utilizes.

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