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Medico-ethno botany: A survey of Topsengattupatti Pachamalai Hills of eastern ghats in Tamilnadu, South India

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ABSTRACT

A Medico-ethno botany survey was carried out among the Malayali tribes in Topsengattupatti of Pachamalai Hills, Tiruchirappalli district, Tamil Nadu around the study area, after season-wise field visits conducted between February 2014 and January 2015. The present study revealed that, the traditional healers used 74 species of plants distributed in 67 genera and 34 families were used to treat various diseases. The present study, Medico-ethno botany and medicinal knowledge gained from the tribal would be very useful information for the botanists, biochemists, pharmacologists, traditional system of medicine and healthcare sector. The medicinal plants used by Malayali were arranged alphabetically followed by botanical name, local name, family name, mode of preparation and ethno medicinal uses.

Keywords: Ethno botany, Malayali tribes, Traditional healers, Pachamalai hills, Eastern Ghats.

INTRODUCTION

India is one of the most important countries in the world in terms of floristic diversity. About 54% of the country's land is under cultivation for food, ornamental and medicinal plant crops and approximately 19% area has varying degree of forest vegetation cover. India has global position in the field of traditional medicines. The rich heritage of flora is due to diversified and varied agro-climatic conditions. The official documented plants with medicinal potential are 3,000 but traditional practitioner use about 8,000 vegetable drugs. India is the largest producer of medicinal herbs and approximately called the botanical garden of the world [1]. Ethno botany is the scientific study of the relationship that exists between people and plants. Since the beginning of civilization, people have used plants as medicine [2].Use of herbal medicines in Asia represents a long history of human interactions with the environment. Plants used for traditional medicine contain a wide range of substances that can be used to treat chronic as well as infectious diseases. A vast knowledge of how to use the plants against different illnesses may be expected to have accumulated in areas where the use of plants is still of great importance [3]. Many investigators are of the view that there should not be any more further delay in the recording of useful data concerning ethno medicine and Phytotherapeutic practices by ethnic groups lest such vital information would be lost permanently as primitive populations become more and more acculturated to modern life styles and technological changes. A great deal of attention has been devoted to medico-ethno botanical research in folk society in recent time [4].They are in need of these medicinal plants, which are found in plenty around their habitations. They know the practical usage of these Medico-ethno botanical plants only by experience. The intimate knowledge of local tribal communities about their medicinal plants is clearly visible when we observe different local names by which these plants. Some individuals are able to tell the properties, habitat of the plants, morphology, and collection time, phenology and able to identify poisonous plants too. The present study was undertaken to explore the medicinal plant use for various disease and disorders by gathering knowledge from the Malayali tribes of Pachamalai hills.

MATERIALS AND METHODS

The present study was undertaken in the Topsengattupatti of Pachamalai Hills, Tiruchirappalli district, Tamil Nadu. The hill is situated 2000 to 3000 feet above mean sea level and lies between 78.31' East and 11.28' North latitude. Pachamalai hill is a part of Eastern Ghats in Tamil Nadu and it contain 59.5 percent forest area and 40.5 percent cultivation land with human settlement. Topsengattupatti is one of the revenue zones in Pachamalai hills and Malayali tribal people were found living around 800 ft. to 1200 ft. at sea level.

Field visits:

A Number of field visits were conducted in the study area every month, throughout the year of study. Systematic field trips for Medico-ethno botanical survey were undertaken during February 2014 and January 2015 in Topsengattupatti of Pachamalai hills.

A Survey was conducted in the study area to gather information regarding medicinal properties of plants, their uses and local names. The information's were obtained from local inhabitants of various ethnic groups throughout fieldwork, questionnaires based interviews and conservation were held with aged nomads. Some information was also obtained from existing literature related to medicinal plants. Collected plant materials was processed and identified at Rapinet Herbarium with help of flora of Tamil Nadu. The specimens were preserved in Rapinet Herbarium at Tiruchirappalli.

RESULTS AND DISCUSSION

The present investigation revealed that the Malayali tribal of the Pachamalai region were using 74 plant species belonging to 67 genera and 34 families were surveyed, the ethnomedicinal was enumerated below in the alphabetical order. For each species, correct binominal names, common names, family names and medicinal uses are given in table 1.Leguminosae was found to be the dominant family with 12 species. Moraceae, Myrtaceae, Verbenaceae were found to be the next dominant families with 4 species in each. Euphorbiaceae, Malvaceae, Rutaceae family with 3 species in each. 8 families with 2 species in each and other 18 families represented by single species, which active applications by the Malayali tribe living in and around Thuraiyur taluk of the Tiruchirappalli district have been recorded not only to conserve their tribal heritage but also to bring out their traditional folk wisdom and beliefs concerning health care.

The therapeutically meaningful plants need to be cultivated in a systematic manner to meet Indian system-based drug industry and to validate pharmacologically the efficacy of all Medico-ethno botany claims.

Table.1: A Survey of Medicinal plants used by the Malayali tribes of Topsengattupatti in Pachamalai Hills, Tiruchirappalli district, Tamil Nadu

S. No.	Botanical Name	Common Name	Family	Uses
1	*Abutilon indicum* L.	Thuthi	Malvaceae	Leaves are used as demulcent, laxative and curing blood piles.
2	*Acacia auriculiformis*A.Cunn. exBenth.	KaththiSavukku	Leguminosae	Decoction of root is used to treat aches and pains and sore eyes.
3	*Ageratum conyzoides* L.	Vellaikkaranchedi	Asteraceae	Leaves ground to paste and applied to cuts and wounds.
4	*Albizia lebbeck*Benth.	Vakai, Siridam	Leguminosae	It is useful to treat snake poisoning.
5	*Andrographis paniculata*Nees.	Nilavembu, Siriyanangai	Acanthaceae	Leaves are useful to cure fever, curing wounds, ulcers and skin diseases. It is best for Diabetes.
6	*Anisomeles indica* (L.)kuntze	Peimarutti	Lamiaceae	Leaves and roots are used as astringent.
7	*Annona squamosa* L.	Sitappalam	Annonaceae	Leaves are used as astringent.
8	*Aristolochia indica* L.	Poochikadichedi	Aristolochiaceae	Root is used to treat poison.
9	*Artocarpus heterophyllus* Lam.	Pala	Moraceae	Leaves are useful to cure fever, curing wounds, boils and skin diseases. It is an edible fruit
10	*Azadirachta indica* A. Juss.	Vembu	Meliaceae	It is one of the traditional medicines. Leaf paste is applied on skin to treat acne. It is generally used for Boils
11	*Bambusa arundinacea* (Retz.) Roxb.	Mungil	Poaceae	Leaves crushed and the paste is applied over cuts and wounds till cure.
12	*Bauhinia purpurea* L.	Nilattiruvatti	Leguminosae	It is used for fever and sneezing. It is used for fodder.
13	*Caesalpinia coriaria* (Jacq.) Willd.	Kaccuram	Leguminosae	It is used for fodder. Leaf paste is applied on skin to treat acne.
14	*Capparis divaricata* Lam	Adhandakaai	Capparidaceae	It is one of the ingredients of jaundice medicine.
15	*Cassia fistula* L.	Konrai	Leguminosae	Leaf paste is applied on skin to treat acne and hair care.
16	*Cassia tora* L.	Thagarai,	Leguminosae	Leaves boiled and eaten as green cures stomach Pain.
17	*Cassine glauca* Rottb. Kuntze.	Karuvali	Celastraceae	Leaf paste is applied on skin to cure allergies.
18	*Citrus limon* L.	Elumichai	Rutaceae	It is an Edible fruit and rich in Vitamin C.
19	*Clitoriaternatea*L.	Sangupukodi	Leguminosae	Leaves are ground to paste and eaten to cure asthma.
20	*Cordia sebestena* L.	Aechinaruvihli	Boraginaceae	Leaves and Root extracts are used for the treatment of Rheumatism and nervous diseases.
21	*Delonix regia* (Boj. ex Hook.) Raf.	Mayilkonrai	Leguminosae	Leaf extract is one of the best treatment for diabetes and diarrhea.
22	*Euphorbia antiquorum*L.	Sathurakalli	Euphorbiaceae	The stem is heated on fire and juice extract is applied for wound healing.
23	*Eucalyptus globulus*Labill.	Thailamaram	Myrtaceae	Leaves added to hot water before taking bath reduces body pain and head ache.

24	*Eugenia bracteata* (Willd) Roxb.	Kaya	Myrtaceae	Decoction of leaves used for malaria.
25	*Evolvulus alsinoides*L.	Vishnukranthi	Convolvulaceae	Leaf paste is mixed with coconut oil and applied for burn injuries.
26	*Ficus benghalensis* L.	Aalamaram	Moraceae	Worm and larvae found on the infected wounds of cattle are eradicated by using the paste made of leaves and latex.
27	*Ficus racemosa* L.	Aththi	Moraceae	Fruit is edible and fruit juice is taken for urinary troubles.
28	*Ficus religiosa* L.	Arasamaram	Moraceae	Leaves are used for ulcers and mouth ulcers.
29	*Gmelina arborea*Roxb.	Kumulitekku	Verbenaceae	Leaves extract is used for ulcer and cough. Root is used for indigestion and fever.
30	*Hamelia patens*Jacq.,	Varithelmunai	Rubiaceae	It is used for blood dysentery.
31	*Hibiscus rosa-sinesis* L.	Chemparati	Malvaceae	The plant extracts uses for diuretics, cough and especially for hair-care.
32	*Jatropha glanduliferа*Roxb.s	Kattakottai	Euphorbiaceae	Stem used as tooth brush to cure mouth ulcers.
33	*Justicia adhotoda* L.	Adathoda	Acanthaceae	Leaf extract given orally reduce diarrhea and dysentery.
34	*Kigelia pinnata* (Lam.) Benth.	Sivankundalam	Bignonaceae	The Powdered Leaves is used for wound healing and cleansing properties.
35	*Lantana camara* L.	Unnichedi	Verbenaceae	Leaves ground to paste and applied on cuts and wounds cures them.
36	*Leucas aspera* Spr.	Thumbai	Lamiaceae	Leaves extract when rubbed over the snakebite area reduces snake poison and pain.
37	*Mangifera indica* L.	Maamarm	Anacardiaceae	It is an edible and Bark is used to treat heel cracks.
38	*Melia dubia* Cav.	Malaivembu	Meliaceae	It is one of the ingredients of dengue medicine and treatment for urinary stones.
39	*Melothria maderaspatana* Cogn.	Muchumuchukkai	Cucurbitaceae	Fruit is an edible and used for the treatment of dysentery and piles.
40	*Memecylon umbellatum* Burm. f.	Alli, Anjani	Melastomataceae	Leaves are used to treat eye troubles. The paste of leaves is used in the treatment of herpes.
41	*MollungoPentaphylla* L.	Turapoondu	Aizoaceae	Paste of leaves is mixed with lime juice and applied on boils.
42	*Morinda tinctoria*Roxb.	Nuna	Rubiaceae	Leaves heated, roasted, and the hot juice taken orally cures cold.
43	*Moringa oleifera* Lam.	Murungai	Leguminosae	Leaves and fruits are edible.
44	*Muntingia calabura* L.	Thenpazham	Muntingiaceae	Fruit is edible. Hedge plant along the roadsides.
45	*Murraya exotica* (L.) Jack	Vengarai	Rutaceae	Decoction of leaves and fruits in hot water orally cures diarrhea.
46	*Oldenlandia corymbosa* L.	Pappanpunthu	Rubiaceae	Leaves are used to treat eye troubles and stomach disorder
47	*Passiflora foetida* L.	Siruppunaikkali	Passifloraceae	It is used to cure liver disorders.
48	*Pedalium murex* L.	Yanainerunjil	Pedaliaceae	Leaves ground to paste and applied on hair to control hair-fall.
49	*Phyllanthus emblica* L.	Nelli	Euphorbiaceae	It is an edible and rich in Vitamin C
50	*Piper nigrum*L.	Kurumilagu	Piperaceae	Seeds are used for orally to cure cough and throat infection.
51	*Pisonia grandis* R.Br.	Chandikeerai	Nyctaginaceae	It is an edible fruit. It is used for ulcers and diabetes.
52	*Pithecellobium dulce* (Roxb.) Benth.	Kodukkapuli	Leguminosae	It is an edible fruits and seed is used as tooth powder.
53	*Plumeria alba* L.	Nelasampangi	Apocynaceae	It is an ornamental plant for flower.
54	*Pongamia pinnata* (L.) Panigrahi.	Pungai	Leguminosae	It is used to extract oil from seeds.
55	*Psidium guajava* L.	Koyya	Myrtaceae	Bark extract used as Dysentery and laxative.
56	*Punica granatum*L.	Mathulai	Punicaceae	It is used for dysentery and edible fruits.
57	*Putranjiva roxburghii* Wall.	Irukolli	Euphorbiaceae	It is highly rejuvenate and restoration properties.
58	*Samanea saman* L.	Amaivagai	Leguminosae	Bark is used for poultice and to cure constipation.
59	*Santalum album* L.	Chandanam	Santalaceae	Sandalwood oil has been widely used in folk medicine for treatment of common colds, bronchitis, skin disorders, liver and gallbladder.
60	*Sidaacuta* (Wight &Arn) Benth.	Veluppattanpoondu	Malvaceae	Leaf paste with little bit of salt applied, cures boils& blisters.
61	*Spathodea campanulata* P.Beauv.	Patadi	Bignonaceae	Bark is used for wound healing and leaves decoction is used for the treatment of malaria
62	*Syzygium cumini* L.	Naval, Nagai	Myrtaceae	Edible fruits and seed ground to powder isused for toothpowder and Diabetes.
63	*Tamarindus indica* L.	Puliyamaram	Leguminosae	Dried fruits are generally used to treat eye infections.
64	*Tectona grandis* L.	Tekku	Verbanaceae	All parts is used for treating anemia, skin Itching, liver related troubles
65	*Tephrosia spinosa* Pers.	Kollukkaivelai	Leguminosae	Root extract used to treat ulcer and stomach aches.
66	*Terminalia catappa* L.	Nattuvadumai	Combretaceae	Seed is used for commercial purpose and rich in proteins.
67	*Thespesia populnea* Cav.	Poovarasu	Malvaceae	leaf is used for skin infection.
68	*Tinospora cordifolia* Willd.	Seenthil	Menispermaceae	Leaf applied for wound and diabetes.
69	*Tribulus terrestris*,L.	Nerungi	Zygophyllaceae	Leaf juice taken orally cures urinary problem and increase urination.
70	*Trichodesma indicum* R. Br.	Kaavilthumbai	Boraginaceae	Leaves are used to treat eye infections and hair care.
71	*Tridax procumbens* L.	Thathapoo	Asteraceae	Leaf extract is used to cure dysentery and ulcers. It is directly applied on wound for wound healing.
72	*Vinca rosea* L.	Nithyakalyani	Apocynaceae	Whole plant is used for curing sore throat, respiratory tracts.
73	*Vitex negundo* L.	Nochi	Verbenaceae	Leaves boiled in vapour is inhaled twice a day to get relief from headache, fever, cold and cough.
74	*Ziziphus rugosa*Lam.	Todari	Rhamnaceae	Stem and Fruits are Hypotensive.

CONCLUSION

This study will generate wide interest regarding the conservation of medicinal flora of the region, its sustainable uses and preservation of folk knowledge. This work will help greatly about local knowledge of people regarding the medicinal use of plants and will help to understand that how local people of Pachamalai hills make use of theses plant for the cure of different ailments and the indigenous names of plants provided by local inhabitants will help to study and understand the plants of this area for future studies. By varying trends of medicinal use and by the death of old people, knowledge related to medicinal plants is going towards extinction and this effort will surely help to safeguard the folk knowledge of medicinal plants prevailing in this area of Topsengattupatti Pachamalai Hills of Eastern Ghats in Tamilnadu, South India, will act as reference for future studies in this regard.

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Figure:1. Medicinal plants used by the Malayali tribes of Topsengattupatti in Pachamalai Hills, Tiruchirappalli district, Tamil Nadu.