

RESEARCH ARTICLE

Ethnobotanical survey of medicinal plants on the foothills of Palamalai hills, Coimbatore district, Tamilnadu

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ABSTRACT

Ethnobotany is a life science which studies the interaction between human beings and flora in particular and broadly deals with the investigations, observations, and identifications of botanical diversity used for the prevention and treatment of human and livestock ailments. The ethnobotanical survey resulted in the documentation of 40 medicinal plants that have been used for medicinal purposes by tribal peoples of Palamalai hills. The habitat of the plants was analysed and it is observed that shrubs were found to be dominant in the community followed by trees, herbs and climbers. The plants collected from the study area are used in the treatment of various diseases.

Keywords: Ethnobotany, medicinal plants, tribals, ailments, novel drugs.

1. INTRODUCTION

Ethnobotany is the study of the relationship between plants and people. The focus of ethnobotany is on how the plant have been used, managed and perceived in human societies and includes uses of plants for food, medicines, dying, for building tools, currency, clothing, rituals, social life and music. India contains about 17,500 species of flowering plants which is said to be 6 - 7% of the total world's plant population, 64 gymnosperms, 1,200 pteridophytes, 2,850 bryophytes, 2,021 lichens, 15,500 fungi and 6,500 algae are reported. India is rich in its own flora that is, endemic plant species (5,725 angiosperms, 10 gymnosperms, 193 pteridophytes, 678 bryophytes, 260 liverworts, 466 lichens, 3,500 fungi and 1,924 algae) (Sanjappa, 2005). The ethnobotany has been interpreted differently. In modern medicine also, plants occupy a very significant role, as raw material for some important drugs, although synthetic drugs and antibiotics brought about a revolution in controlling different diseases. But these synthetic drugs are out of reach to millions of people. Those who live in remote places depend on traditional healers, whom they know and trust. Most of the raw materials for traditional medicine of pharmaceutical houses are collected from wild sources. Many of the medicinal plants are

cultivated commercially now-a-days for extraction of some important active constituents for use in modern medicine.

2. METHODOLOGY

2.1 Study area

Palamalai hill is a small hill associate with Southern Western Ghats which is selected for the present study. It comes under Periyanaickenpalayam forest range of Coimbatore Forest division. It lies between 11o 9" 19.944" & 11o 9.332402" N latitude and 76o 52" 27.6311" & 76o 52.460518" E longitude. The sea level altitude is 818.423 m or 2685.115 feet. The temperature was approximately 22 to 39o C during the study period. The forest types of Palamalai hills are dry tropical and dry deciduous forests. The sandy loam with rocky substratum soil was covered all over the place of the study area.

2.2. Ethnobotanical Survey

The Ethnobotanical survey was conducted in the Irulas Tribal area in Palamalai hills of Coimbatore district, Tamil Nadu during the period from December 2022 to February 2023. The information regarding the medicinal plants was collected through elderly tribal peoples and local

inhabitants, who have an experience in the usage of plants. The selection of informants was mainly based on their rich indigenous knowledge and long-term experience of utilization of plants. Field survey mainly composed of, visiting the study area and collecting plants and gathering information about each plant through interviews.

Repeated enquiries were made based on the plants that are available in the tribal area. Information on the local name of the plants, medicinal uses, parts used, other ingredients if any, added, mode of preparation and administration were collected and noted. The fresh specimens were collected and identified with the help of available Floras and Literature. Plants with their nomenclature were arranged alphabetically by vernacular name, family, parts used, mode of administration and medicinal uses. The identification and nomenclature of the listed plants were based on the Flora of Coimbatore by Chandrabose and Nair (1988), Flora of Tamil Nadu

Carnatic by K.M. Matthew and Flora of Presidency of Madras by Gamble and Fischer (1915-1936).

3. RESULTS AND DISCUSSION

The ethnobotanical survey shows 40 medicinal plants that have been used for medicinal purposes by tribal peoples of Palamalai hills. (Tab:1) The medicinal plants were documented and arranged with their botanical name, family name, common name, habit, plant parts used, ingredients, mode of application and medicinal uses. These 40 plants from the study area belong to 22 families. Out of these 22 families Rutaceae stands dominant with 5 species followed by Fabaceae and Apocynaceae. (Fig. 1). While analyzing the habitat of the plants under survey it is observed that shrubs were found to be dominant in the community followed by trees, herbs and climbers. Out of the 40 plants 6 plants belong to Herbs, 18 Shrubs, 5 climbers and 11 were trees. (Fig. 2)

Table 1. List of plants

S. No.	Scientific name	Local name	Family name	Parts used	Medicinal uses
1	<i>Acacia nilotica</i> (L.) Delile	Karuvellamaram	Fabaceae	Leaf	Leaf paste is applied on wounds
2	<i>Acronychia acidula</i> F. muell	lemonaspen	Rutaceae	Leaf	Leaf paste is applied for itching
3	<i>Albizia amara</i> (Roxb.) B. Boivin	arapu unja maram, vanni	Fabaceae	Leaf	Dried powdered leaf is used as hair wash reagent
4	<i>Capparis sepiaria</i> L.	Karunjurai	Capparidaceae	Leaves	Leaves are pasted with lemon juice and are applied topically to treat swellings.
5	<i>Capparis zeylanica</i> L.	Atondai	Capparidaceae	Root	Extract of root bark administered orally for twice a day it cures the Dysentery and diarrhea
6	<i>Cardiospermum halicacabum</i> L.	Mudakathan keera	Sapindaceae	Leaf	Leaf is taken as food for curing joint pain
7	<i>Chromolaena odorata</i> (L.) R.M. King and H. Rob	Kamyunist kalai	Asteraceae	Leaf	Leaf paste is applied on wounds
8	<i>Clausena anisata</i> (Willd.) Hook. f. ex Benth	Potti	Rutaceae	Leaf	Leaf used to cure diarrhea

9	<i>Crossandra nilotica</i> .Oliv	firecracker flower	Acanthaceae	Leaf	Leaf paste is applied on snake bite wounds
10	<i>Dodonaea viscosa</i> subsp. <i>Angustifolia</i> (L.f.) J.G.West	Virali	Sapindaceae	Root	Boiled root extract used to cure mouth ulcer
11	<i>Erythroxylum</i> <i>monogynum</i> Roxb.	Devadara	Linaceae	Bark	Bark of wood powder treated for stomach ache
12	<i>Euphorbia</i> <i>umbellata</i> (Pax)Bruyns	African milk bush	Euphorbiaceae	Latex	Latex is used to Anti- inflammatory agent
13	<i>Euphorbia antiquorum</i> L.	Sasudu Malayan tree	Euphorbiaceae	Whole plant	Used as flock medicine for wounds
14	<i>Furcraea foetida</i> (L.)Haw	Yanaikathaalai	Asparagaceae	leaves	Used to cure fever
15	<i>Gyrocarpus</i> <i>americanus</i> Jacq.	Thanukku	Hernandiaceae	Root	Root decoctions administered to treat diarrhea
16	<i>Hibiscus vitifolius</i> L.	Grape leaved mallow	Malvaceae	Whole plant	Decoction is used to cure jaundice
17	<i>Hugonia serrata</i> Lam.	Motria kanni	Linaceae	Root	Root paste taken internally, two teaspoon per day for two days, to arrest dysentery
18	<i>Hybanthus</i> <i>enneaspermus</i> (L.) F. Muell.	Purusharatnam	Violaceae	Entire plant	Entire plant is shade dried, powdered and administered with honey for Immunity
19	<i>Lantana camara</i> (L)	Unnichedi	<i>Verbinaceae</i>	leaf	leaf paste is used for cure itching
20	<i>Ligustrum lucidum</i> W.T Aiton	Chinese privet, glossy privet	Oleaceae	Fruits	Used to increase immune function
21	<i>Marsdenia viridiflora</i> R.Br	bushbanana	Apocynaceae	Latex	Antidote for insect bites
22	<i>Murraya paniculata</i> (L.) Jack.	Konji	Rutaceae	Leaf	The leaf paste is applied over the wounds to heal
23	<i>Nerium oleander</i> L.	Yellow bells	Euphorbiaceae	Root	Root powder is used to cure tumors externally
24	<i>Opuntia humifusa</i> (Raf)	sapathikalli	Cactaceae	Fruit	Fruit juice is used to cure joint pain
25	<i>Opuntia phaeacantha</i> Englm	sapathikalli	Cactaceae	Fruit	Fruit juice is used to cure joint pain
26	<i>Pleiospermium alatum</i> (Wight & Arm.) Swingle	Kuruntha	Rutaceae	Leaf	Extract of leaf mixed with the lemon grass is boiled in neem oil in a low flame for 20 min it applied on affected area

27	<i>Plumbago zeylanica</i> L.	Ceylon, doctorbush	Plumbaginaceae	Root	Decoction is used for diarrhea
28	<i>Senna auriculata</i> (L.)Roxb	Aavarai	Fabaceae	Flower	Flower buds are eaten raw for diabetic control
29	<i>Tamarindus indica</i> L.	Puli	Fabaceae	Fruit	The fruit is used to cure stomach pain
30	<i>Tecoma stand</i> (L)Kunth	trumpet bush ,	Bignoniaceae	Leaf	Leaf decoction is used for cure stomach pain
31	<i>Tectona grandis</i> Linn	Tekkumaram	Verbenaceae	leaves	Leaf paste is taken orally to treat skin diseases and indolent ulcer
32	<i>Thevetia peruviana</i> (Pers.)K. Schum.	Yellow bells	Apocynaceae	Leaves	Decoction of leaves is used to cure jaundice.
33	<i>Toddalia asiatica</i> (Linn.)	Kindu mullu	Rutaceae	leaves	Decoction of leaves is given internally to cure stomach ache
34	<i>Tribulus terrestris</i> (Linn.)	Nerunjimul	Zygophyllaceae	fruits	Fruits are mixed with boiled rice and taken orally to cure dry cough
35	<i>Trichodesma indicum</i>	Kavil-thumbai	Boraginaceae	leaves	Decoction of leaves is taken orally to treat diarrhea and dysentery.
36	<i>Tridax procumbens</i> Linn	Kinathupoondur	Asteraceae	leaves	Leaves are crushed and applied topically on cuts and wounds.
37	<i>Vitex negundo</i> Linn	Notchi	Verbenaceae	flower	Powdered flowers are given with milk to treat diarrhea and cardiac disorders.
38	<i>Wrightia arborea</i> (Dennst.)	Karupaalai	Apocynaceae	Stem and bark	Powdered stem bark is mixed with curd and is taken orally to treat urinary stones
39	<i>Wrightia tinctoria</i> (Roxb.)	Veppalai	Apocynaceae	leaf	Dried leaves are burnt and the smoke is inhaled to get relief from headache
40	<i>Ziziphus oenopolia</i> (L.)Mill	Jackal jujube,	<i>Rhamnaceae</i>	bark	Decoction from bark is used for fever, Dysentery and loss of appetite

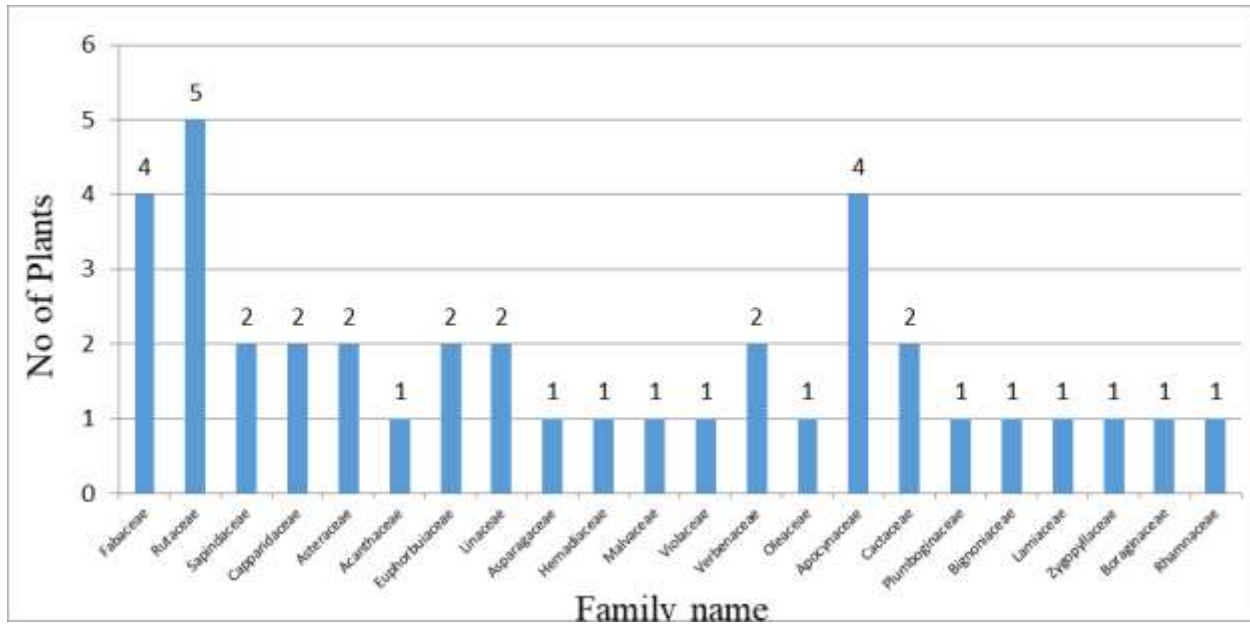


Figure 1. List of plants in each family

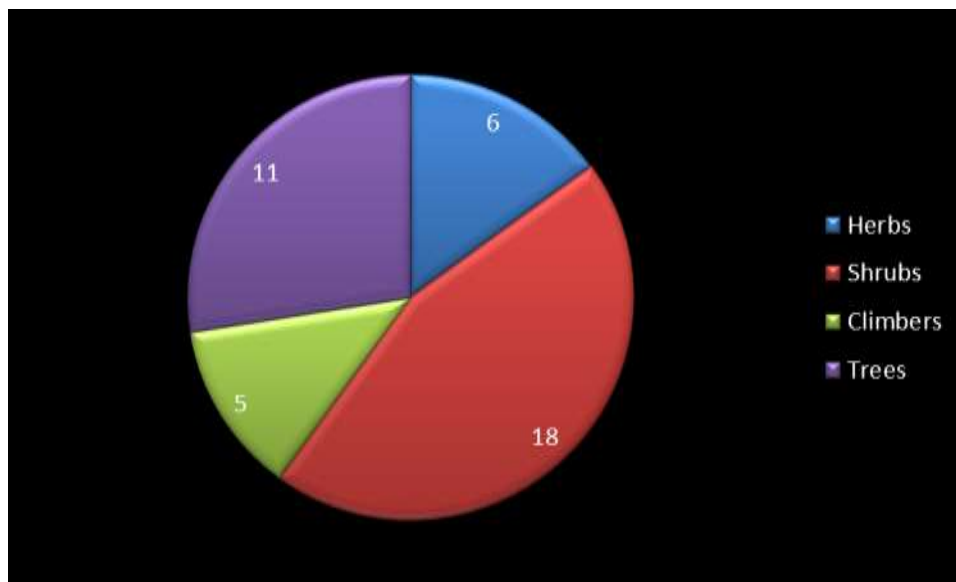


Figure 2. Habitat of the plants

For development of local awareness of the value of Medicinal Plants as well as the need for their conservation and bringing the benefits of Medicinal Plants to support local health care systems and livelihoods ethnobotany is important. Present survey revealed that a number of medicinal plant species are used by indigenous people of the study area to treat various ailments. The latex of *Marsdenia viridiflora* is used as an Antidote for

insect bites. Most of the plants are used in curing the stomach ailments. The plants parts such as root, stem, fruits, leaves and seeds are used as medicine. The plant parts are either eaten raw or as decoctions/powders. All the plants hold various medicinal properties.

Our findings provide baseline data to establish a connection between the traditional health practioners and scientific communities, which could be substantial in novel drug discovery.

Furthermore, ethnobotanical data is of significant value for conservation managers and policy makers for sustainable management of medicinal plant species, which are under threat due to over exploitation. Therefore, such popular plant species could be further analyzed for bioactive constituents, *in vivo/in vitro* biological activities, which may leads to the development of new and potential drugs.

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