

ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED BY THE LOCAL PEOPLE IN VELLORE DISTRICT, TAMILNADU.

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Summary

An ethnobotanical survey was conducted in and around Vellore district, to study the various medicinal plants used by the people for the treatment of their ailments such as fever, cold, cough, diabetes, jaundice, diarrhoea, rheumatism, snake bite, and headache. The study was also included of the method plant extract, dose, duration and mode of application.

Keywords: Medicinal plants, Vellore, Survey, Ailments

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Introduction

Plants have always played a major role in the treatment of human traumas and diseases worldwide (1). They have been used as sources of modern drugs, either by providing pure compounds, starting materials for partial synthesis of useful compounds or models for synthesis of new drugs (2). According to the World Health Organization (WHO) as much as 80% of world's population depends on traditional medicine for their primary health care needs (3). 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 (4).

Ethnopharmacological information is an important tool in drug discovery (5). The ethnobotanical survey can bring out many different clues for the development of drugs to treat human diseases. Safe, effective, and inexpensive indigenous remedies are gaining popularity equally among the people of both the urban and rural areas, especially in India and China (6).

Ethnobotany and ethnomedical studies are today recognized as the most viable method of identifying new medicinal plants or refocusing on those earlier reported for bioactive constituents. It is interesting to note that most of the drugs derived or originally isolated from higher plants were discovered in an ethnobotanical or ethnomedical context. Several studies have revealed that tribal population, not only depend on plant based resources for medicines, food, forage and fuel, but also play a vital role in natural resource management that forms the core aspect of conservation biology (7). Today, many indigenous herbal remedies remain largely undocumented or recognized as potential forms of treatment and consequently continue to be used by only small groups of indigenous populations. The present work was carried out to explore the medical remedies of some medicinal plants used by the rural people of Vellore district in Tamilnadu for the treatment of human ailments.

Materials and Methods

The entire area of Vellore District lies between 12°15' to 13°15' north latitudes and 78° 20' to 79° 50' East latitudes in Tamilnadu state. The district is spread over an area of about 6077 km² and is bounded on the North and Northeast by Thiruvalluvar District, on the South and Southeast by Kanchipuram District, on the south by Thiruvannamalai district, on the Southwest by Krishnagiri District and on the northwest and north by Andhra Pradesh state. The district receives an annual rainfall is about 448.8 – 1544.6 mm. The minimum and maximum temperature varies between 26.3° and 38.2°.

Ethnobotanical data were collected according to the methodology suggested by (8). The ethnobotanical data were collected using questionnaire, interviews and discussions in their local tribal people. A totally more than 200 respondents were interviewed, these included males and females that depended on plant as sources of medicines either for self-medication or for treating others. The Flora of Presidency of Madras (9) and an excursion flora of central Tamilnadu (10) were used to ascertain the nomenclature of the plant species used for identification and authentication of the plants. Folklore medicinal plants are arranged in alphabetical order in Table 1 which represents their botanical names followed by the family, vernacular name.

Table 1: Medicinal plants used by local people from Vellore district of Tamilnadu.

S.No	Botanical Name	Family	Local Name	Plant Parts used
1.	<i>Albizia lebbbeck</i> (L.) Benth	Mimosaceae	Vagai	A leaf paste is applied to cure eczema.
	<i>Aegle marmelos</i> Corr.ex .Roxb	Rutaceae	Vilvam	Leaves is used for diabetes.
3.	<i>Alstonia venenata</i> (R.Br).	Apocynaceae	Paalai	The milky latex is used to heal wounds and cuts.
4.	<i>Ammannia baccifera</i> L.	Lythraceae	Neermalneruppu	A leaf paste is applied to relieve swelling
5.	<i>Anisomeles malabarica</i> (L.) R. Br. ex Sims.	Lamiaceae	Peithumbai	A paste of the leaves is applied to cure eczema.

6.	<i>Annona squamosa</i> L	Annonaceae	Sitapali	The young fruits are dried a powder, mixed with water, is taken internally to cure dysentery.
7.	<i>Argemone mexicana</i> L.	Papaveraceae	Narimirati	The yellow latex is used to cure ulcers of the lips and pimples and for wound healing.
8.	<i>Andrographis paniculata</i> (Burm.f.) Wallich ex Nees	Acanthaceae	Nilavaambu	A handful of leaves is taken and an extract is made, which, mixed with milk, is taken internally to cure snakebites.
9.	<i>Abrus precatorius</i> L.	Fabaceae	Kundumani	A paste of the seeds is used to cure eczema.
10.	<i>Aloe vera</i> , (Linn.)Burm.	Liliaceae	Chotthukatalai	It is also used in treating fever eye infections and ulcer.
11.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Nayuruvi	The boiled leaves are consumed to relieve internal piles and the roots are used as a brush to relieve pain and clean the teeth
12.	<i>Acalypha indica</i> L	Euphorbiaceae	Kuppaimeni	A leaf paste, mixed with common salt, is used to cure eczema and chest pain.
13.	<i>Alternanthera sessilis</i> L.	Amaranthaceae	Ponaganikerai	It is used as a treatment for headaches. It is also used to treat hepatitis and asthma.
14.	<i>Azadirachta indica</i> (A.Juss).	Meliaceae	Vaipamaram (Neem)	Bark is useful in malarial fever. Tender twigs are used as tooth brush. Leaf paste applied for mumps.
15.	<i>Acacia catechu</i> (Linnf.)Willd (Khair)	Mimosaceae	Karunkali	The bark of the tree is used in chronic diarrhoea.
16.	<i>Bambusa arundinacea</i> , (Willd).	Poaceae	Mungil	Young leaves and terminal bud of bamboo along with turmeric and the leaves. Aloe Vera is ground and the paste is applied to the fractured bones for two weeks to join quickly.
17.	<i>Cassia auriculata</i> L.	Caesalpiniaceae	Aavaram poo	Dried and powdered flowers are used for cleaning the hair, reducing body heat and cures diabetes.
18.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Arugampul	The juice of the whole plant is used to reduce body heat and to lower the blood pressure.
19.	<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Nithyakalyani	Whole plant is powdered and mixed with cow's milk and taken orally to treat diabetes.
20.	<i>Cissus quadrangularis</i> L.	Vitaceae	Pirandai	A paste of the whole plant is taken for improving the digestion and inducing appetite.

21.	<i>Caesalpinia pulcherrima</i> (L.) S. W.	Caesalpinia ae	Mailkondarai	A seed paste is applied to inflamed teeth to cure toothache.
22.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakkaththan	A leaf paste is applied for joint pain or leaves are prepared in the form of a soup and consumed to cure rheumatic pains.
23.	<i>Centella asiatica</i> L.	Apiaceae	Vallarai	The dried plant is powdered and this powder, mixed with hot water, is taken for gas troubles; the fried plants are used in the diet of children for improving their memory.
24.	<i>Cataranthus pusillus</i> (Murr).	Apocynaceae	Mukkuthipoo	A leaf paste is applied externally for tumors.
25.	<i>Caesalpinia bonducella</i> , (Flem).	Caesalpinia ae	Kalakaai	A decoction of the leaf is used as nutritional tonic.
26.	<i>Calotropis gigantea</i> , (L.) R. Br.	Asclepiadaceae	Erukku	Milky latex is applied on the wounds on legs of livestock.
27.	<i>Clitoria ternatea</i> L.	Fabaceae	Sangu Pushpam	Root powder is mixed with water and taken orally to treat indigestion, eye diseases and headache.
28.	<i>Carica papaya</i> L.	Caricaceae	Pappaali	The milky latex of the plant is applied to teeth in order to relieve inflammatory pain.
29.	<i>Coccinia grandis</i> (L.) J. Voigt	Cucurbitaceae	Kovai	The leaf extract, mixed with milk, is used in cases of jaundice.
30.	<i>Datura metel</i> L.	Solanaceae	Oomathai	Few drops of leaf juice is poured into ear to treat earache.
31.	<i>Dioscorea oppositifolia</i> L	Dioscoreaceae	Valli kizhangu	Boiled root tubers are taken orally to reduce body heat.
32.	<i>Euphorbia hirta</i> , L.	Euphorbiaceae	Amman patcharisi	Leaf paste mixed with goat's milk is consumed to stop diarrhea and dysentery.
33.	<i>Eclipta prostrata</i> L.	Asteraceae	Manjal Karisalankanni	A leaf extract is applied to the head to relieve dandruff and to blacken gray hair.
34.	<i>Eclipta alba</i> L.	Asteraceae	Karisalaanganni	Plant is used for the treatment of hepatitis.
35.	<i>Eucalyptus tereticornis</i> (Smith)	Myrtaceae	Thailamaram	The vapours of boiled leaves are inhaled for coughs and a cold.
36.	<i>Erythrina indica</i> , (Lam).	Papilionaceae	Kalyana murungai	The leaves and flowers, are used to cure epidemic skin diseases.
37.	<i>Ficus benghalensis</i> L.	Moraceae	Alamaram	Stem latex is applied topically

				on heel cracks.
38.	<i>Ficus religiosa</i> L.	Moraceae	Arasu	Dried leaf powder is mixed with water and takes normally to get relief from body pain.
39.	<i>Gymnema sylvestre</i> (Retz).	Asclepiadaceae	Sirukurinchan	Leaves dried in shade and powdered are taken for Diabetes to reduce Blood sugar.
40.	<i>Gloriosa superba</i> L.	Liliaceae	Kanuvalikodi	The pasted tubers are used as an abortifacient. Leaves are used to destroy head lice.
41.	<i>Hemidesmus indicus</i> , (R. Br).	Asclepiadaceae	Nannari	The leaf, root extract is used for blood purification.
42.	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Semparuththi	Shade dried and powdered flowers are used for cleaning the hair and to prevent hair loss.
43.	<i>Ixora coccinea</i> L.	Rubiaceae	Idlipoo	Hundred grams of the dried flowers are boiled in coconut oil and the oil extract is applied externally twice a day to treat eczema.
44.	<i>Jasminum angustifolium</i> (L.) Wild	Oleaceae	Malligai	Leaves and flowers made into a paste and applied externally to remove the clot of Breast Milk.
45.	<i>Lawsonia inermis</i> L.	Lythraceae	Maruthani	A leaf paste is applied to cracks of the feet.
46.	<i>Leonotis nepetaefolia</i> (L.) R. Br.	Lamiaceae	Theanthumpai	A leaf paste is used for eczema.
47.	<i>Leucas aspera</i> (Willd).	Lamiaceae	Thumbai	The vapours from the boiled leaves are inhaled to relieve coughing and colds.
48.	<i>Marsilea minuta</i> L.	Marsileaceae	Aarakkerai	The dried and powdered leaves, mixed with hot water, are taken in cases of diabetes.
49.	<i>Mimosa pudica</i> L.	Mimosaceae	Thottasurungi	Pinch of leaves paste is applied topically to cuts and wounds.
50.	<i>Mukia maderaspatana</i> (L.) M. Roemer	Cucurbitaceae	Musumusukai	The leaf extract is taken internally to cure piles.
51.	<i>Morinda tinctoria</i> Roxb.	Rubiaceae	Nuna	The leaf extract is used to cure dysentery.
52.	<i>Moringa oleifera</i> (Lam).	Moringaceae	Murungai	The boiled leaves and flowers are eaten to increase fertility in men.
53.	<i>Musa paradisiaca</i> L.	Musaceae	Vazhai	A plant extract is given for snake bite and also for burns.
54.	<i>Mangifera indica</i> L.	Anacardiaceae	Maamaram	Mixture of ¼ of the seed ground with cow's milk is taken to arrest excess bleeding during mensus.
55.	<i>Murraya koenigii</i> L. Sprengel	Rutaceae	Karuveppilai	Juice of tender leaves is taken orally to arrest vomiting.

56.	<i>Momordica charantia</i> L.	Cucurbitaceae	Pavakai	Local peoples uses for the fruit, seeds, vines and leaves include, diabetes, tumors, blood disease, asthma and some viral infections.
57.	<i>Melia azedarach</i> L.	Meliaceae	Malaivembu	The juice of the bark is taken internally in the early morning for three days in order to relieve stomach pain.
58.	<i>Nerium oleander</i> (Sol).	Apocynaceae	Arali	Juice prepared from the stem bark is boiled with gingelly oil and two drops are poured into ear to treat ear pain.
59.	<i>Opuntia dillenii</i> (Haw).	Cactaceae	sappathikalli	Fruits edible used in whooping cough.
60.	<i>Ocimum americanum</i> , L.	Lamiaceae	Naaithulasi	Leaf juice is taken for stomach upset.
61.	<i>Prosopis cinearia</i> L.	Mimosaceae	Vanni maram	The bark is prescribed for scorpion sting.
62.	<i>Pongamia pinnata</i> L.	Fabaceae	Pungam	The seed oil is used to cure rheumatic pains and swellings.
63.	<i>Phyllanthus amarus</i> , Schum. & Thonn.	Euphorbiaceae	Kizhanelli	Leaf juice is administered to cure fever and jaundice.
64.	<i>Polycarphaea corymbosa</i> L.	Caryophyllaceae	Malligaimottuchedi	Roots leaves paste is applied externally.
65.	<i>Sesbania grandiflora</i> (L.) Poiret	Fabaceae	Agaththi	The leaves prepared in the form of a soup are taken as a vermifuge and also to cure peptic ulcer.
66.	<i>Solanum torvum</i> L.	Solanaceae	Sundaikai	A leaf paste is used to bath a newborn baby in order to protect it from infections.
67.	<i>Solanum trilobatum</i> , L.	Solanaceae	Thuthuvalai	The leaf juice is used to treat cough and cold.
68.	<i>Solanum nigrum</i> , L.	Solanaceae	Mana thakkaali	The leaf and fruit extract is used for deworming and treating fever.
69.	<i>Syzygium cumini</i> L.	Myrtaceae	Navel	The dried and powdered seeds, mixed with hot water, are taken for reducing the Blood sugar level.
70.	<i>Sida cordata</i>	Malvaceae	Arrival manippundu	The leaf juice is effective in treating diarrhoea.
71.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	puliyamaram	A paste of the seed coat is applied to a scorpion bite to relieve pain.
72.	<i>Thespesia populnea</i> (L.)	Malvaceae	Poovarasu	Tender fruit mixed with castor oil and made in to a paste applied externally for skin disease.

73.	<i>Vitex negundo</i> L.	Verbenaceae	Notchi	Inhale boiled leaves vapour to relieve headache.
74.	<i>Zingiber roseum</i> (Rosc).	Zingiberacea e	Inji	The juice of the rhizome, mixed with honey, is taken internally to improve digestion and to relieve giddiness.

Results and Conclusions

Although our ancient sages through hit and trial method developed herbal medicines, the reported uses of plant species do not certify efficacy (11). The present preliminary report on ethnomedicinal uses of some plant species need to pharmacologically screened, chemically analyzed and tested for bioactive activities (12, 13). In this paper, we focused mainly on plant species reported by the local people in and around the study area for their medicinal uses. Presented data are the general results of the ethnobotanical survey conducted from March 2008 to January 2009. In the present investigation 74 medicinal plants are used for the treatment of various diseases like asthma, piles, diabetes, snake bite, skin disease, ulcer, stomach pain, cough, headache, blood pressure anemia, tumor, rheumatism, eczema, wounds, dysentery, jaundice, antifertility ,leprosy, laxative, astringent, urinary disorders, paralysis, diarrhoea and diuretic etc. Some of them are used as anthelmintic, fever and antiseptic also. Similarly *Momordica charantia*, which the local people use for piles and blood diseases, is also used for curing asthma, ulcers and bronchitis in Ayurveda. In Unani it is used for curing syphilis and rheumatism (14). 74 plants species belonging to 37 families (Table1). The utility lies through their roots, bark, latex, leaves, fruits and seeds. These are taken internally or applied externally in the form of infusion, decoction, paste or powder. Most of the plants used in medicines are either mixed with other ingredients or single. Medicinal plants studied are enumerated arranged alphabetically with their botanical name followed by families' name, local name, parts used and ethnomedicinal uses. Some important medicinal plants needs immediate conservation and their cultivation should be encouraged through which their extinction can be prevented and local village people may also get low-cost cure their disease.

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