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Ethnobotanical Study of Medicinal Plants Used by Local People in Ariyalur District, Tamilnadu, India

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Abstract: To explore the indigenous ethno botanical plants which are being practiced by the local people of Ariyalur District for curing various ailments. A structured interview was conducted with 83 people to collect the medicinal information of plants during the month June 2012 to May 2013. A total of 70 plant species belonging to 41 families were reported with their medicinal values. Among these plant species, leaves were majorly used. These results will provide information about medicinal plants and utilization of these plants to mankind. Further research on these medicinal plants will lead to the discovery of new bioactive compounds.

Keywords: Ethno botanical plants, medicinal information, Ariyalur District.

Introduction

Plants are used as medicines from time immemorial. India has the rich heritage of using medicinal plants in folklore practices¹. It is estimated that 70% to 80% of the people worldwide chiefly rely on traditional healthcare system and largely on herbal medicines². India harbors about 15 percent (3000 to 3500) medicinal plants, out of 20,000 medicinal plants found growing wild in different climatic regions of the country³. These medicinal plants have a long-standing history in many indigenous communities and continue to provide useful tools for treating various diseases⁴. This information provides platform to several botanists and plant scientist who were directing vigorous researches towards the discovery or rediscovery of several medicinal plants along with their remedies for various diseases⁵⁻¹¹. The objective of this present study was to conduct an ethno botanical study about medicinal plants which are used to cure various ailments in Ariyalur district, Tamilnadu, India.

Study Area

The area of the present study is located in Ariyalur District which lies between 11.13704⁰ N and 79.07582⁰ E and covers an area of 1949.31 km². District is bordered by the districts of Cuddalore to the north and north east, Nagapattinam to the east, Thanjavur to the south and south east, Tiruchirapalli to the south west and Perambalur to the west.

Method of Study

A personal investigation was conducted among various age groups of people of Ariyalur district. A pre-prepared questionnaire was prepared and various interviews were conducted to collect the information about various medicinal plants. About 81 people were met and the results were tabulated (Table 1).

Table 1: The list of medicinally important plants used by the villagers of Ariyalur district, with their family name, local name and medicinal values.

Sl. No	Botanical name	Family	Local Name	Parts used	Method of preparation and mode of usage
1	<i>Abrus precatorius</i> Linn.	Fabaceae	Vellai kundu Mani	Seed	Seed decoction is taken orally to increase sperm count and to treat stomach pain.
2	<i>Abutilon indicum</i> G. Don.	Malvaceae	Thuthi	Leaf	Leaf is cooked with onion and taken orally to treat piles.
3	<i>Acacia torta</i> Craib.	Mimosaceae	Seeva keerai	Leaf & Young twig	Leaf is cooked with onion and taken with food. It facilitates the expulsion of gas.
4	<i>Achyranthes aspera</i> Linn.	Amaranthaceae	Nauruvi	Leaf	Paste of leaf with onion is applied externally on the bitten site of dog and to cure skin diseases.
5	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Adathodai	Leaf	The leaf decoction is taken internally to cure cold and cough.
6	<i>Adina cordifolia</i> Hk. f.	Rubiaceae	Manjal Kadambai	Bark	Fresh bark is ground with brown sugar and cumin. The paste of this mixture is taken internally to treat female asthenia.
7	<i>Ailanthus excelsa</i> Roxb.	Simarubaceae	Peevari maram	Leaf	Decoction is prepared from leaves and taken internally to treat paralysis.
8	<i>Alangium salvifolium</i> Wang.	Alangiaceae	Marada kodi	Leaf	Leaves are fried and taken internally to treat chest burning.
9	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Mullu Keerai	Leaf & Root	Leaf paste along with lemon juice is taken with food to cure stomach ulcer.
10	<i>Andrographis paniculata</i> Nees.	Acanthaceae	Periaa nangai	Leaf	Leaf paste is taken orally for snake bite and to reduce pain.
11	<i>Argemone mexicana</i> Linn.	Papaveraceae	Manjal Paal chedi	Latex	Latex of the plant is applied topically on the site of skin burns.
12	<i>Asparagus racemosus</i> Willd.	Liliaceae	Neermuthi	Leaf & Root	Leaf and root powder is mixed with breast milk. The paste is taken internally to improve immunity of children.
13	<i>Azima tetracantha</i> Lamk.	Salvadoraceae	Mullu kuthi chedi	Leaf	Decoction prepared from leaves and is taken orally to treat cold and cough.
14	<i>Bauhinia retusa</i> Ham.	Fabaceae	Aathi	Leaves & fibers	Leaves are fumigated and s inhaled to get relief from fever. The stem fibers are used in coir production.
15	<i>Bauhinia tomentosa</i> Linn.	Caesalpiniaceae	Mantharai	Leaf	The leaf powder is mixed with honey are taken internally to treat digestive problems and vomiting.
16	<i>Boerhaavia diffusa</i> Linn	Nyctaginaceae	Saranda kodi	Leaf	Leaf is pasted with cumin and taken internally to cure digestive problems.
17	<i>Caesalpinia sepiaria</i> Roxb.	Caesalpiniaceae	Intha chedi	Leaf	Leaves are cooked and taken orally with food for digestion problems.
18	<i>Capparis sepiaria</i> Linn.	Violaceae	Thotti chedi	Fruit & Root	Leaves are pasted with lemon juice and are applied topically to treat swellings. The fruits are edible.
19	<i>Cardiospermum halicacabum</i> Linn.	Sapindaceae	Thatu putu	Leaf	Leaf paste is mixed with onion and coconut oil is taken orally for joint pain.

20	<i>Cassia hirsuta</i> Linn.	Caesalpiniaceae	Paaparettai	Root	The root is pasted with cumin and taken internally to treat stomach burning after a meal.
21	<i>Cassia tora</i> Linn.	Fabaceae	Thahara chedi	Shoot tip	Tender twigs are cooked with onion and taken with food.
22	<i>Cipadessa baccifera</i> Miq.	Meliaceae	Seeruholi maram	Tree	The paste of root, leaf and bark is applied topically to cure psoriasis.
23	<i>Cissus quadrangularis</i> Linn.	Vitaceae	Perandai	Stem & leaf	Paste of stem and leaf is taken orally with food for easy digestion and to increase appetite.
24	<i>Cocculus hirsutus</i> Diels.	Menispermaceae	Vella katha kodi	Leaf	Paste is prepared from leaves and it is administered orally to treat Leucorrhoea.
25	<i>Croton sparsiflorus</i> Morang.	Euphorbiaceae	Sinathamani chedi	Latex	Plant latex is applied externally on the site of wasp bite.
26	<i>Curculigo orchioides</i> Gaertn.	Hypoxidaceae	Nilappanai	Leaf	The leaf paste taken internally to increase sperm count.
27	<i>Datura metel</i> Linn.	Solanaceae	Karu oomathai	Leaf	The fresh leaves are boiled with gingelly oil and applied topically on joints to cure swellings.
28	<i>Eclipta prostrata</i> Linn.	Asteraceae	Karisalanganni	Whole plant	The powder of <i>Eclipta prostrata</i> , <i>Leucas aspera</i> and <i>Phyllanthus niruri</i> are mixed with butter milk and taken orally to cure jaundice.
29	<i>Euphorbia heterophylla</i> Linn.	Euphorbiaceae	Paal Poodu	Leaf	Leaf is cooked with coconut oil and onion. It is taken with food for stomach problems and to treat dysentery.
30	<i>Euphorbia Hirta</i> Linn.	Euphorbiaceae	Ammaan pachcharsi	Leaf & fruit	Leaf and fruit powder is mixed with cow's milk and taken orally to treat Leucorrhoea and to keep the body cool.
31	<i>Ficus retusa</i> Linn.	Moraceae	Athi maram	Leaf & fruit	Leaf paste along with their fruit combined with cumin is taken orally to cure swellings, Lung blockage. It is best for treating diabetes and applied topically over the fractured bones.
32	<i>Flacourtia ramontchi</i> 'L' Herit.	Bixaceae	Kejalika chedi	Fruit	Ripened fruits are taken orally to keep the body cool.
33	<i>Glycosmis pentaphylla</i> (Ratz)correa.	Rutaceae	Molehulukki	Root	The root is pasted with cumin and taken internally to treat Asthma.
34	<i>Grewia tiliaefolia</i> Vahl.	Tiliaceae	Thadasu maram	Tree	The decoction of bark is applied all over the head before taking bath to treat mental illness.
35	<i>Hemidesmus indicus</i> R. Br.	Asclepiadaceae	Nannari	Leaf & Root	Root and Leaf decoction is taken orally to regulate digestion.
36	<i>Indigofera aspalathoides</i> Vahl.	Fabaceae	Sivanar vembu	Whole plant	The ash of the whole plant is added with coconut oil and applied topically to treat psoriasis.
37	<i>Jasminum angustifolium</i> Vahl.	Oleaceae	Kattu mallige	Leaf	The leaf is boiled in water and taken with food to cure diarrhea.
38	<i>Jatropha curcas</i> Linn.	Euphorbiaceae	Katta amankku	Bark & latex	Decoction prepared from bark and mixed with water. The water is used to take bath for the treatment of stomach problems during pregnancy. Latex is taken orally for same purpose.

39	<i>Lantana camera</i> Linn.	Verbanaceae	Unichedi	Leaf	Leaf paste is applied topically to treat wounds.
40	<i>Lantana wightiana</i> Wall.	Verbanaceae	Vella uni chedi	Leaf	The leaf is ground with <i>Cipadessa baccifera</i> root, leaf and bark & applied topically to treat Psoriasis.
41	<i>Launaea pinnatifida</i> cass.	Goodeniaceae	Kaatu thumbi	Leaf	Leaf decoction is taken internally to get relief from fever.
42	<i>Lawsonia inermis</i> Linn.	Lythraceae	Maruthondri	Leaf	The fresh leaves are ground and gargled to treat mouth ulcer.
43	<i>Leucas aspera</i> Spreng.	Lamiaceae	Kennathumbai	Leaf	Leaf paste or crushed leaf is taken both externally & internally to treat snake bite. It is also applied topically on the forehead to cure one side headache.
44	<i>Mimosa pudica</i> Linn.	Mimosaceae	Thotta sinungi	Leaf & Root	Root and Leaf infusion is applied on the wounds.
45	<i>Mukia maderaspatana</i> Linn.	Cucurbitaceae	Musu musukai	Climber	Boil the leaf juice with gingelly oil and applied topically on the head before taking bath to cure Asthma.
46	<i>Murraya paniculata</i> (L) Jack.	Rutaceae	Sedisil maram	Leaf	The leaf paste is applied over the wounds to heal.
47	<i>Ocimum basilicum</i> Linn.	Lamiaceae	Thiruneetru pachai	Leaf	Dried leaves are kept in fire and the smoke is inhaled to cure Asthma.
48	<i>Oxalis Corniculata</i> Linn.	Oxalidaceae	Puliyarai	Root	Root paste is taken orally to treat common fever.
49	<i>Phyllanthus amarus</i> Linn.	Euphorbiaceae	Keela nelli	Root & fruit	Roots and fruits are crushed and mixed with goat's milk. The mixture is taken orally to cure jaundice and liver problems.
50	<i>Plumbago zeylanica</i> Linn.	Plumbaginaceae	Kodiveli	Whole plant	Root is pasted with gingelly oil and applied topically to cure piles.
51	<i>Randia dumetorum</i> Lamk.	Rubiaceae	Kaarai kai chedi	Fruit	Fruits are rubbed on hard substances and paste is applied topically to cure skin diseases.
52	<i>Rubia cordifolia</i> Linn	Rubiaceae	Chevvali kodi	Leaf	The leaf paste is applied topically to scorpion sting and dizziness.
53	<i>Rubus ellipticus</i> Sm.	Rosaceae	Vella mulli	Root	The root paste is taken internally to treat paralysis.
54	<i>Ruellia patula</i> Jacq.	Acanthaceae	Puni chedi	Leaf	Leaf paste is applied topically all over the body to treat fever.
55	<i>Santalum album</i> Linn.	Santalaceae	Santhana maram	Tree	The paste of tender twig mixed with the juice of <i>Phyllanthus emblica</i> are taken orally to treat urinary tract infection and it is best for diabetes.
56	<i>Sesbania aegyptiaca</i> Pers.	Fabaceae	Sithahathi	Tender twig & seed	Tender twig and seeds are infused with coconut oil and applied topically on the hair regularly for healthy and black hair.
57	<i>Sida acuta</i> Burm.	Malvaceae	Kala karandai	Leaf	Crush the fresh leaves and the juice is applied topically to treat skin burns.
58	<i>Solanum indicum</i> Linn.	Solanaceae	Mullu chundal	Fruit	Unripe fruits are cooked and taken with food to expel tapeworms. These fruits are used to prepare pickles.
59	<i>Solanum nigrum</i> Linn.	Solanaceae	Chukuti chedi	Leaf & Fruit	Leaves and fruits are chewed and swallowed to cure mouth ulcer.
60	<i>Solanum xanthocarpum</i> Schrad	Solanaceae	Kandan kattiri	Fruit	Unripe fruits are cooked and taken with food.

61	<i>Spilanthes acmella</i> Murr.	Asteraceae	Manjal Poo chedi	Flower	Flowers are crushed and applied on the site of toothache.
62	<i>Spilanthes calva</i> D.C.	Asteraceae	Vettu marunthu chedi	Leaf	Leaf paste is applied directly on wounds.
63	<i>Strebulus Asper</i> Lour	Moraceae	Kembara	Leaf	Leaf paste is applied topically to treat measles like swellings on the skin.
64	<i>Syzygium cumini</i> Linn.	Myrtaceae	Naval palam	Seed	Seed powders mixed with either hot water or cow's milk is taken orally in empty stomach to treat diabetes.
65	<i>Terminalia bellerica</i> Roxb.	Combretaceae	Thaanthi maram	Bark & Root	The bark and root are grind & took extract, which is applied topically to treat unnecessary peelings on the skin.
66	<i>Toddalia asiatica(L)</i> Lam.	Rutaceae	Masiha chedi	Bark	Paste is prepared form fresh stem bark and it is taken internally as well as topically to cure paralysis.
67	<i>Trianthema decandra</i> Linn.	Aizoaceae	Sathi charanai	Root	The root of this plant is taken internally to treat Elephant dialysis.
68	<i>Tridax procumbens</i> Linn.	Asteraceae	Mookuthi chedi	Leaf	Leaf juice is applied topically on wounds.
69	<i>Ziziphus oenoplia</i> Mill.	Rhamnaceae	Churipala chedi	Fruit & Bark	Bark and Fruit paste along with cumin is taken internally to treat diarrhea.
70	<i>Ziziphus mauritiana</i> Linn.	Rhamnaceae	Kodithotti maram	Leaf	Paste of leaf along with the leaves of <i>Ailanthus excelsa</i> Roxb. is taken internally as well as topically to treat paralyze.

Results & Discussion

Among 70 plant species of 68 genera and 41 families, Euphorbiaceae and Fabaceae were represented by five species, Solanaceae and Asteraceae were represented by four species, four families were represented by three species, seven families were represented two species, twenty six families were represented by one species (Table 2). The present study mainly focuses on the medicinal plants used by the local people in the Ariyalur District for primary health care and to cure various diseases like paralysis, skin infections, joint pain, body pains, diarrhea, ulcers, skin burns, tooth ache, headaches, wounds, diabetes, liver problems, pregnancy, old anti-pyretic, leucorrhoea, piles, jaundice, psoriasis, asthma, mental illness etc. Most of the earlier ethno botanical studies confirmed that leaves are the major portion of the plant used in the treatment of diseases¹².

Table 2: Number of families and plants used by local peoples of Ariyalur district

S.No	Family	No of plants
1	Acanthaceae	3
2	Aizoaceae	1
3	Alangiaceae	1
4	Amaranthaceae	2
5	Asclepiadaceae	1
6	Asteraceae	4
7	Bixaceae	1
8	Caesalpiniaceae	3
9	Combretaceae	1
10	Cucurbitaceae	1
11	Euphorbiaceae	5
12	Fabaceae	5
13	Goodeniaceae	1
14	Hypoxidaceae	1
15	Lamiaceae	2
16	Liliaceae	1
17	Lythraceae	1
18	Malvaceae	2
19	Meliaceae	1
20	Menispermaceae	1
21	Mimosaceae	2
22	Moraceae	2
23	Myrtaceae	1
24	Nyctaginaceae	1
25	Oleaceae	1
26	Oxalidaceae	1
27	Papaveraceae	1
28	Plumbaginaceae	1
29	Rhamnaceae	2
30	Rosaceae	1
31	Rubiaceae	3
32	Rutaceae	3
33	Salvadoraceae	1
34	Santalaceae	1
35	Sapindaceae	1
36	Simarubaceae	1
37	Solanaceae	4

38	Tiliaceae	1
39	Verbanaceae	2
40	Violaceae	1
41	Vitaceae	1

This study clearly reveals that most of the plants were used to treat skin diseases (16 species) followed by digestive disorders (13 species), body pain (6 species), fever (4 species), ulcer, diabetes, asthma and paralysis (3 species), jaundice, asthma, piles, diarrhea (2 species), reproductive disorder (1 species) and other diseases were treated by 5 species (Table 3).

Table 3: Name of the diseases and botanical name of the plants used by the peoples of Ariyalur district

S.No	Name of the Disorder	Botanical name of the plant
1	Skin diseases	<i>Randia dumetorum</i> Lamk. <i>Strebulus Asper</i> Lour. <i>Sida acuta</i> Burm. <i>Spilanthes acmella</i> Murr. <i>Tridax procumbens</i> Linn. <i>Terminalia bellerica</i> Roxb. <i>Murraya paniculata</i> (L) Jack. <i>Mimosa pudica</i> Linn. <i>Lantana wightiana</i> Wall. <i>Indigofera aspalathoides</i> Vahl. <i>Datura metel</i> Linn. <i>Lantana camera</i> Linn. <i>Cipadessa baccifera</i> Miq. <i>Capparis sepiaria</i> Linn. <i>Achyranthes aspera</i> Linn. <i>Argemone mexicana</i> Linn.
2	Paralysis	<i>Toddalia asiatica(L)</i> Lam. <i>Rubus ellipticus</i> Sm. <i>Ziziphus mauritiana</i> Linn.
3	Diarrhoea	<i>Jasminum angustifolium</i> Vahl. <i>Ziziphus oenoplia</i> Mill.
4	Digestive disorders	<i>Syzygium cumini</i> Linn. <i>Solanum indicum</i> Linn. <i>Jatropha curcas</i> Linn. <i>Hemidesmus indicus</i> R. Br. <i>Euphorbia heterophylla</i> Linn. <i>Cassia hirsuta</i> Linn. <i>Cissus quadrangularis</i> Linn. <i>Capparis sepiaria</i> Linn. <i>Bauhinia tomentosa</i> Linn. <i>Alangium salvifolium</i> Wang. <i>Spilanthes calva</i> D.C. <i>Acacia torta</i> Craib. <i>Amaranthus spinosus</i> Linn. <i>Abrus precatorius</i> Linn.
5	Snake Bite	<i>Andrographis paniculata</i> Nees. <i>Leucas aspera</i> Spreng.

6	Cold & Cough	<i>Adhatoda vasica</i> Nees. <i>Azima tetraacantha</i> Lamk.
7	Ulcer	<i>Amaranthus spinosus</i> Linn. <i>Lawsonia inermis</i> Linn. <i>Solanum nigrum</i> Linn.
8	Fever	<i>Ruellia patula</i> Jacq. <i>Bauhinia retusa</i> Ham. <i>Launaea pinnatifida</i> Cass. <i>Oxalis Corniculata</i> Linn.
9	Diabetes	<i>Syzygium cumini</i> Linn. <i>Ficus retusa</i> Linn. <i>Santalum album</i> Linn.
10	Body Pain	<i>Rubia cordifolia</i> Linn. <i>Grewia tiliaefolia</i> Vahl. <i>Flacourtia ramontchi</i> 'L'Herit. <i>Euphorbia hirta</i> Linn. <i>Cardiospermum halicacabum</i> Linn. <i>Andrographis paniculata</i> Nees.
11	Asthma	<i>Ocimum basilicum</i> Linn. <i>Glycosmis pentaphylla</i> (Retz) Correa. <i>Mukia maderaspatana</i> Linn.
12	Jaundice	<i>Phyllanthus amarus</i> Linn. <i>Eclipta prostrata</i> Linn.
13	Reproductive disorder	<i>Curculigo orchioides</i> Gaertn.
14	Asthenia	<i>Adina cordifolia</i> Hk. F. <i>Abrus precatorius</i> Linn.
15	Piles	<i>Abutilon indicum</i> G. Don. <i>Plumbago zeylanica</i> Linn.

Conclusion

Thus, the present study helps us to understand the traditional knowledge on Medicinal plants and their values. The conservation and use of medicinal plants should be enhanced for the betterment of our lives. Further research on these medicinal plants will lead to the discovery of new bioactive compounds.

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