

Biodiversity of Medicinal Plants in Thudaripettai Village, Nagapattinam District, Tamil Nadu, India

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Abstract— *The medicinal plants have received more attention among researchers to treat various diseases and disorders. This study was aimed to record the various medicinal plants present in Thudaripettai Village situated in Tharangambadi Taluk, Nagapattinam district of Tamil Nadu. A total of 60 plant species belonging to 35 families were reported with their medicinal values. These results will provide information about medicinal plants and methods of utilization of these plants to cure various diseases of mankind. Survey of the information of medicinal plants used by the villagers were collected and arranged alphabetically followed by common name, vernacular name, family name, parts of use, methods of uses, medicinal uses and their habit. The information is very much useful for further research which will lead to the discovery of new bioactive compounds from the above medicinal plants.*

Keywords— *Medicinal plants, diseases, survey, Thudaripettai village.*

I. INTRODUCTION

Medicinal plants play an important role in supporting healthcare system in world. According to the World Health Organization (WHO, 2001), 80% of the rural population in developing countries utilizes locally available medicinal plants for their primary healthcare needs. About 90% of the country's medicinal plants are found in forest habitats. Only 10% of the medicinal plants are distributed among other landscape sources like open grasslands, agricultural pastures and in and around fresh water bodies, etc. It may be noted that India is one amongst those nations which possess a historical track record of having made a significant global contribution by virtue of its traditional knowledge of the medicinal plants. India has rich plant diversity and is one among the mega biodiversity countries of the world. The most of the medicinal drugs used to cure human diseases are obtained from plants and their derivatives (Principle, 2005). The crude drugs are usually obtained from the dried parts of medicinal plants (roots, stem wood, bark, leaves, flowers seeds, fruits, and whole plants etc.). They form the essential raw materials for the

production of traditional remedies of Ayurveda, Siddha, Unani, Homeopathy, Tibetan and other systems of medicine including the folk, ethno or tribal medicines (Fabricant and Farnsworth, 2001).

The Indian systems of medicine still continue to provide medical care to majority of the people on account of their cheaper cost, easily available with no side effects (Kokate *et al.*, 2002). Herbal drugs are safer in the treatment of various diseases (Ayyanar and Ignacimuthu, 2005, Sathyavathi and Janardhan, 2011). The Indian systems of medicine use around 8000 species of plants which include trees (33%), herbs (32%), shrubs (20%), climbers (12%) and epiphytes, grasses, lichens, ferns and algae put together (3%). Among 2000 drugs being used in curing humane ailments in India, only 200 are extracted from various plants (Agarwal and Ghoseh, 1985). India is also home to many language, culture and beliefs which have in turn contributed to the high diversity of traditional knowledge. Large populations in India still rely on traditional herbal medicine (Dubey *et al.*, 2004; Kumar *et al.*, 2015). The village folks developed their own therapeutic knowledge for the treatment of diseases with herbs and this knowledge is only stored in their memory. Therefore, the study was conducted with a view to record the scattered list of the available plants with Knowledge and to point out the potentials of medicinal plants of the area.

II. MATERIALS AND METHODS

A survey was conducted in Thudaripettai Village to record the list of medicinal plants and their importance in medicinal world. The study area Thudaripettai Village is situated in Tharangambadi Taluk in Nagapattinam District of Tamil Nadu which lies between 11°01'45" N and 75°50'58" E. The plants were collected from different sites of the village area, identified by their local names with the help of old aged people and villagers. The data on medicinal uses of plants was collected through general conversation and questionnaire with people of the area. The Botanical name of the plants was verified with the

specimens kept in Botany Department, Annamalai University, Tamil Nadu.

III. RESULTS AND DISCUSSION

In most cases, the active molecules of the medicinal plant reported here are unknown. Studying the biological and pharmacological properties of medicinal plant extracts is a rational approach in the quest for new drugs. Phytochemical and pharmacological studies can lead to evidence of potential therapeutic use of medicinal plants and the development of new medicines. The traditional information

accumulated by local people has an important role to play in this effort (Kumar *et al.*, 2015). In the Present study, gives documentations of the medicinal plants used by the people of Thudaripettai village were collected and recorded. The list out 60 plant species were belonging to 35 families are reported (Table-1). Among all families, Solanaceae (6 species) is most dominant family followed by Euphorbiaceae (5 species), Apocynaceae and Fabaceae (4 species), Lamiaceae and Moraceae (3 species), Rutaceae, Poaceae, Myrtaceae, Cucurbitaceae, Apiaceae,

S.No	Botanical name	Common name	Vernacular name	Family	Parts of use	Methods	Uses	Habit
1	<i>Acalypha indica</i>	Indian acalypha	Kuppaimeni	Euphorbiaceae	Whole plant	Extract	Fire wounds, snake bites, scabies, and eczema.	Herb
2	<i>Achyranthes aspera</i>	Spear grass	Nayuruvi	Amaranthaceae	Whole plant	Extract	Skin diseases, constipation, lack of appetite, acidity, cough, ear pain, leprosy and rabies.	Herb
3	<i>Acorus calamus</i>	Sweet-flag	Vasambu	Araceae	Rhizomes	Paste	Eczema.	Shrub
4	<i>Adhatoda vasica</i>	Malabar nut	Adhatoda	Acanthaceae	Leaves, roots, flowers, barks	Extract, dry leaf	Asthma, cough, fever, vomiting, stomach problems, rheumatism, piles, anti-inflammatory.	Shrub
5	<i>Aegle marmelos</i>	Wood apple	Vilvam	Rutaceae	Fruits	Paste	Scabies.	Tree
6	<i>Aloe vera</i>	Indian aloe	Sotrukattrazha	Liliaceae	Whole plant	Extract, juice	Wounds, diabetics, antibacterial, cooling purposes.	Herb
7	<i>Andrographis paniculata</i>	Creyat root	Nilavembu	Acanthaceae	Leaves	Extract, juice	Tinea curies.	Tree
8	<i>Artocarpus heterophyllus</i>	Jackfruit	Palamaram	Moraceae	Leaves	Ash	Skin diseases.	Tree
9	<i>Azadirachta indica</i>	Neem tree	Vepamaram	Meliaceae	Whole plant	Extract, oil, powder	Skin diseases, eczema, psoriasis, healthy hair, liver function, detoxify blood,	Tree

							and balance blood sugar, antifungal, antibiotic, antibacterial and antiviral.	
10	<i>Bambusa bambos</i>	Bamboo	Moongil	Poaceae	Leaves, stems	Decoction, juice	Intestinal worms, ulcers.	Tree
11	<i>Bassia longifolia</i>	Mahaal mow tree	Illupai	Sapotaceae	Fruits	Salads	Piles, constipation, improving appetite.	Tree
12	<i>Borassus flabellifer</i>	Palmyra palm	Panai	Palmaceae	Leaves, flowers, fruits	Juice, extract	Wounds, skin diseases, sugar antidote for poisoning.	Tree
13	<i>Cynodon dactylon</i>	Bermuda grass	Arugampul	Poaceae	Leaves	Juice	Cold, blood purification, itches and skin diseases.	Grass
14	<i>Calotropis gigantea</i>	Crown flower	Erukku	Apocynaceae	Latex, seeds, leaves, root	Powder, latex, fresh root	Toothache, skin care, wounds, boils, coughs, improving appetite, scabies, and toothbrush.	Shrub
15	<i>Cardiospermum helicacabum</i>	Balloon vine	Mutakuatran	Sapindaceae	Leaves, roots, seeds, extract	Paste	Rheumatism, anti-diarrheal, nervous problems, snake bites.	Climber
16	<i>Carica papaya</i>	Papaya tree	Papali	Caricaceae	Fruits, latex	Salads, latex.	Malaria, non-fertility, antiviral, antibacterial, kidney failure.	Tree
17	<i>Catharanthus roseus</i>	Madagascar periwinkle	Nithyakalyani	Apocynaceae	Roots, shoots	Extract	Numerous diseases, diabetes, malaria, Hodgkin's lymphoma.	Subshrub
18	<i>Centella asiatica</i>	Indian pennywort	Vallarai	Apiaceae	Leaves	Extract, salads, thuvaial	Varicose veins, chronic venous insufficiency, psoriasis, fever, cold.	Herb
19	<i>Clitoria ternatea</i>	Butterfly pea	Sangupoo	Fabaceae	Leaves	Juice	Scabies.	Climber
20	<i>Coccinia indica</i>	Coccinia	Kovai	Cucurbitaceae	Leaves,	Extract	Ulcers, diabetes,	Climber

					fruits		fever.	r
21	<i>Curcuma longa</i>	Turmeric	Manjal	Zingiberaceae	Rhizomes	Powder	Skin disease, antimicrobial and stomach problems.	Herb
22	<i>Cyperus rotundus</i>	Nut grass	Koraikizhang u	Cyperaceae	Whole plant	Juice, paste, bulb.	Fever, digestive system disorders, wounds, stomach pain, toothache.	Grass
23	<i>Datura metal</i>	Devil's trumpet	Ummathai	Solanaceae	Leaves	Extract	Swelling, headache, asthma, coughs.	Shrub
24	<i>Eclipta alba</i>	Bhringraj	Vellai karisalan gani	Asteraceae	Whole plant	Extract	Jaundice, urinary problems, swelling, cold, ulcer, wounds, eye drops.	Herb
25	<i>Eichornia crassipes</i>	Water hyacinth	Akaya thamarai	Pontederiaceae	Flower	Oil	Skin diseases.	Weed
26	<i>Emblica officinalis</i>	Indian gooseberry	Nelli	Euphorbiaceae	Leaves, bark flowers, nuts	Extract	Tuberculosis, asthma, cancer, jaundice, liver tonic.	Tree
27	<i>Ficus benghalensis</i>	Baniyan	Aalamaram	Moraceae	Leaves, fruits, latex	Extract	Bleeding, piles, joint, muscular pain, skin diseases.	Tree
28	<i>Ficus religiosa</i>	Ashwatha tree	Arasamaram	Moraceae	Whole plant	Extract	50 types of disorders including asthma, diabetes, diarrhea, epilepsy, gastric problems, inflammation disorders, infectious and sexual disorders.	Tree
29	<i>Heliotropium indicum</i>	Indian heliotrope	Thelkodukku	Boraginaceae	Leaves	Extract	Skin diseases, ulcers.	Herb
30	<i>Hibiscus rosa-sinensis</i>	Shoe flower	Semparuthi	Malvaceae	Leaves, roots, flowers, young stem	Paste, decoction, powder, toothbrush	Mouth wound, ulcers, urinary disease, regularizes periods and hair fall.	Shrub

31	<i>Jatropha curcas</i>	Purging nut	Kattamanakku	Euphorbiaceae	Seeds, leaves	Extract	Jaundice, piles, wounds.	Shrub
32	<i>Lagenaria vulgaris</i>	Bottle gourd	Suraika	Cucurbitaceae	Vegetable	Kootu	Digestive problems.	Climber
33	<i>Lawsonia inermis</i>	Henna	Maruthani	Lythraceae	Seeds, leaves	Extract	Wounds, skin ulcers, eye drop.	Shrub
34	<i>Leucas aspera</i>	Leucas	Thumbai	Labiataceae	Leaves	Constant rubbing	Scorpion bites.	Herb
35	<i>Mangifera indica</i>	Mango tree	Mamaram	Anacardiaceae	Gum, stem, leaves, fruits, bark	Gum, paste, decoction	Skin diseases, sugar and menstrual disorder.	Tree
36	<i>Manihot esculenta</i>	Bitter cassava	Maravalli kizhangu	Euphorbiaceae	Rhizomes	Powder	Skin diseases.	Shrub
37	<i>Mentha spicata</i>	Mint	Pudina	Lamiaceae	Leaves	Thuvaial	Stomach pain and indigestion problems.	Herb
38	<i>Mimosa pudica</i>	Sensitive plant	Thottal surungi	Fabaceae	Roots, leaves	Decoction, infusion	Tuberculosis, wound.	Climber
39	<i>Morinda tinctoria</i>	Indian mulberry	Nuna	Rubiaceae	Fruits	Salads	Antibiotic.	Small tree
40	<i>Murraya koenigii</i>	Curry tree	Karuveppilai	Rutaceae	Leaves	Thuvaial, rasam, vada.	Lack of appetite, trough infection, digresses of sugar level.	Tree
41	<i>Musa paradisiaca</i>	Plantain	Vaalai	Musaceae	Whole plant	Extract, juice	Dysentery, stomach ache, piles, ulcers, kidney stones.	Tree
42	<i>Nerium indicum</i>	Rose laural	Arali	Apocynaceae	Leaves, seeds	Extract	Leprosy, skin disease, snake bites.	Shrub
43	<i>Ocimum sanctum</i>	Holy basil	Tulasi	Solanaceae	Whole plant	Paste and extract	Asthma, cold, cough, kidney problems, stimulate in fertility and improving appetite.	Herb
44	<i>Phyllanthus amarus</i>	Seed under leaf	Keezhanelli	Phyllanthaceae	Whole plant	Paste	Jaundice, hepatitis, kidney and liver related disease.	Herb
45	<i>Plectranthus</i>	Aromatic	Karpuravalli	Lamiaceae	Leaves	Extract	Fever, Acidity,	Herb

	<i>amboinicus</i>	us					cough.	
46	<i>Polygala crotarioides</i>	Green chirayta	Siriyangai	Polygalaceae	Leaves	Extract	Snake bites, antiviral.	Herb
47	<i>Pongamia pinnata</i>	Indian beach	Punkai maram	Fabaceae	Bark, leaves, flowers, seed	Paste, extract	Piles, ulcers, anti-septic, and parasitic rashes.	Tree
48	<i>Psidium guajava</i>	Guava	Goya	Myrtaceae	Fruits, bark, leaf	Salads, powder	Diabetes, hypertension, caries, wounds, pain relief, fever, diarrhea, rheumatism, lung disease, ulcers, bleeding, mouthwash.	Small-tree
49	<i>Ricinus communis</i>	Castor oil plant	Amanakku	Euphorbiaceae	Seed	Extract	Ulcer, eye irritation.	Shrub
50	<i>Sesamum indicum</i>	Gingily	Ellu	Pedaliaceae	Leaves, peel, flowers, seeds	Paste, oil, extract, powder	Piles, eye problems, wound, eczema, scabies, body heat and hair fall problems.	Shrub
51	<i>Solanum nigrum</i>	Blacknight-shade	Manathakkali	Solanaceae	Leaves	Rasam, kootu, juice	Heart, lungs, liver diseases, itches, ulcer and stomach problems.	Herb
52	<i>Solanum torvum</i>	Night shade plant	Sundaikai	Solanaceae	Fruits	Extract	Asthma, tuberculosis.	Shrub
53	<i>Solanum trilobatum</i>	Heliotrope	Thutuvalai	Solanaceae	Whole plant	Paste	Asthma.	Climber
54	<i>Solanum xanthocarpum</i>	Wild eggplant	Kadangkattari	Solanaceae	Leaves	Decoction	Asthma, cold, cough, polio.	Herb
55	<i>Syzygium cumini</i>	Indian black plum	Naval	Myrtaceae	Seeds, fruits	Extract	Dysentery, reduce sugar, mouthwash.	Tree
56	<i>Tabernaemontana divaricata</i>	Crape jasmine	Nandiarvattai	Apocynaceae	Roots, stems, latex, flowers	Latex, decoction	Scabies, dental caries, cough, eye disease, ulcers, anti-diarrheal and kidney stone, skin disease, intestinal worms.	Shrub
57	<i>Tamarindus indica</i>	Tamarin	Puliyamaram	Fabaceae	Fruits,	Spice	Laxative,	Tree

		d tree			young stem, bark	Condiment, syrups, decoctions, toothbrush, different pharmaceutical products	digestive, remedy for biliousness, bile disorders, Control of heart rate and blood pressure.	
58	<i>Trachyspermum ammi</i>	Capticum	Omum	Apiaceae	Leaves	Extract	Stomach pain, body pain, running nose.	Herb
59	<i>Vitex negundo</i>	Chinese chaste tree	Notchi	Lamiaceae	Leaves, roots, seeds	Extract, paste	Eczema, ringworm, other skin diseases, liver disorders, spleen enlargement, rheumatic pain, gout, abscess, backache, vermicide, it is also used to control population of mosquitoes.	Small tree
60	<i>Zizyphus mauritiana</i>	Indian plam	illandai	Rhamnaceae	Fruits	Juice, extract	Ulcers, liver trouble, asthma and fever.	Small tree

Acanthaceae (2 species) and 23 families like Amaranthaceae, Anacarddiaceae, Araceae, Asteraceae, Boraginaceae, Caricaceae, Cyperaceae, Labitaceae, Liliaceae, Lythraceae, Malvaceae, Meliaceae, Musaceae, Palmaceae, Pedaliaceae, Phyllanthaceae, Polygalaceae, Pontederiaceae, Phamaceae, Rubiaceae, Sapindaceae, Sapotaceae, Zingiberaceae were represented by single species (Table-2).

S.NO	FAMILY	NUMBER OF SPECIES
1	Acanthaceae	2
2	Amaranthaceae	1
3	Anacarddiaceae	1
4	Apiaceae	2
5	Apocynaceae	4
6	Araceae	1
7	Asteraceae	1
8	Boraginaceae	1
9	Caricaceae	1
10	Cucurbitaceae	2

11	Cyperaceae	1
12	Euphorbiaceae	5
13	Fabaceae	4
14	Labiataceae	1
15	Lamiaceae	3
16	Liliaceae	1
17	Lythraceae	1
18	Malvaceae	1
19	Meliaceae	1
20	Moraceae	3
21	Musaceae	1
22	Myrtaceae	2
23	Palmaceae	1
24	Pedaliaceae	1
25	Phyllanthaceae	1
26	Poaceae	2
27	Polygalaceae	1
28	Pontederiaceae	1
29	Rhamnaceae	1
30	Rubiaceae	1
31	Rutaceae	2
32	Sapindaceae	1
33	Sapotaceae	1
34	Solanaceae	6
35	Zingiberaceae	1

The different parts of the plants were used for the treatment of various diseases or disorders such as cold, itches, eczema, fever, digestive system disorders, diarrhea and dysentery, stomach-ache, asthma, jaundice, polio, joint-ache, headache, toothache, swelling, scabies, malaria, kidney problems etc. Most of the species were used for curing more than one disease. These were administrated mostly orally and a range of preparations such as decoction, paste and powder were adopted. Most of these preparations were made from the freshly collected plants just before the use; however, some are also used in dry form.

IV. CONCLUSION

From this study, many medicinal plants have been documented and this information was obtained from the local people and they are very much useful for further researchers in the field of ethno-medico-botany, taxonomy and pharmacological studies. 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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