



Survey of Medicinal Plants in Azhagiapandiapuram Panchayat, Kanyakumari District, Tamil Nadu, India

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Abstract

Folk medicine is one of the natural health care systems have been practicing by all human cultures from the beginning of civilization. Biodiversity existing in each area also plays an inevitable role in the development of such healthcare practices. Kanyakumari district, the southernmost part of India is also blessed with one of the most luxuriant vegetation and its diversity, its indigenous people has learned to utilize this rich biodiversity to meet the primary healthcare needs for the millennia. The present paper deals with 62 plants belong to 38 families are used by the local healers, traditional practitioners of Azhagiapandiapuram panchayat of Kanyakumari district for the treatment of various diseases. For each species botanical name, family, local name, parts used, method of preparation and dosage have been recorded.

Key words: Traditional medicine, Traditional knowledge, documentation, medicinal plants, Azhagiapandiapuram, Kanyakumari District.

1.INTRODUCTION

Herbal medicine is widely practiced throughout world from time immemorable. These medicines are safe and environment friendly nearly 80% of the world population depends upon traditional system of healthcare ^[1]. Herbal medicines are in great demand in both developed and developing countries as a source of primary health care owing to their attributes having wide biological and medicinal activities ^[2]. The plants have been used in the traditional health care system from ancient times particularly among the tribal communities. Numerous wild and cultivated plants play a vital role in their culture, customs, traditional health care system rituals etc. and this interrelation ship has evolved over generation of experience and practice ^[3].

Human beings from the very beginning of its appearance on this earth have been indispensably associated with plant kingdom for its survival. They are important source of therapeutic drug and play a significant role in the survival of the tribal and ethnic communities. The tribal people are the ecosystem people who live in harmony with the nature and maintain a close link between man and environment ^[4]. The knowledge on medicinal plants usage is very often passed on from one generation to the next through verbal communications and most of this knowledge has not been documented ^[5]. Plants from time immemorial have served

human beings as sources of food, shelter, clothing and medicines. Before the advent of modern allopathic medicine and synthetic drugs, plants and to a certain extent animal and minerals were used in various formulations for treatment of diseases by traditional medicinal practitioners ^[6]. Historically all medicinal preparations were derived from plants whether in the simple form of plant parts or in the more complex form of crude extract mixture ^[7].

As per WHO estimate about 80% of the population in the developing countries depends directly on plants for its medicine ^[3]. Currently there is a need to conserve the biodiversity in the area by providing sustainable ecological services and opportunities for equitable development. This study aims to assess the richness and diversity of plant species ^[8].

2. MATERIALS AND METHODS

2.1 Description of the study Area

The present study was carried out in and around Azhagiapandiapuram Panchayat in Kanyakumari District. Azhagiapandiapuram is a small village in Kanyakumari District of Tamilnadu, India. It is located 25.00 km distance from Kanyakumari. 90% of people involved in agriculture directly. Azhagiapandiapuram Panchayat is the nearest town,



8 km away from Boothapandi and 16 km from Nagercoil covering an area of 1202.01-hectare unit. The total population of this area is 3230 in which Male and female are 1622 and 1608 respectively. Total of 840 houses are present in this panchayat. More than 95% peoples in this village are farmers growing specifically banana, coconut, leafy vegetables, mango, jack fruit, guava and paddy. All the farmers are dependent only on the pond water or dam water for irrigation. Nagercoil, Vallioor, Thakkalai, Tirunelveli are the nearby cities to Azhagiapandiapuram.

2.2 Plant collection, Identification and Preservation

Frequent field trips have been made in and around Azhagiapandiapuram panchayat during the study period from July 2018 to March 2019. Representative samples of medicinal plants were collected from the study area only when species identification was not possible in the field so preserved as herbarium as per the standard methods. Preliminary identification of the plants was carried out by using different regional floras^[9-17]. The voucher herbarium specimens were later identified authentically in comparison with the specimens of Botanical survey of India, southern circle, Coimbatore. All the herbarium specimens were deposited in the P. G and Research Department of Botany, S. T. Hindu College, Nagercoil.

2.3 Enumeration of medicinal flora

The collected medicinal plants were identified for their local medicinal uses through ethnobotanical interviews with local healers, medicinal plant collectors, medicinal plant practitioners and farmers adjacent to the study area. The medicinal properties of the plants were identified from the pertinent available literature (Google search engine). All the collected medicinal plants were enumerated with legitimate binomial nomenclature, local name, family, habit, disease, useful part, mode of preparation and uses.

3. RESULTS AND DISCUSSION

The present study revealed the use of 62 species of plants distributed in 54 genera belonging to 38 families which were commonly used by elderly people and Traditional healers of Azhagiapandiapuram panchayat for the treatment of various diseases. They include herbs, shrubs, trees and climbers. They are mostly found growing in various places and sometimes widely distributed in all places. Some of them are cultivated near the houses particularly of medicinal healers.

Herbs form the major source of medicine consisting of about 41.9% followed by trees, climbers and shrubs comprising 33.8%, 14.5%, 9.6% respectively. Different plant parts like leaves, leaves and stem, flower, fruit, Rhizome, Root and leaf, latex, bark, stem, root, seed and sometimes the whole plant are used as medicine for the treatment of various diseases.

Lamiaceae and Euphorbiaceae have more number of representatives with 5 species each. This is followed by Amaranthaceae which have 4 species. Families like

Solanaceae and Fabaceae are represented by three members each. Acanthaceae, Apocynaceae, Lythraceae, Myrtaceae, Cucurbitaceae, Piperaceae, Zingiberaceae, Verbenaceae, Anacardiaceae and Rutaceae are represented only by 2 members each. Nyctaginaceae, Boraginaceae, Liliaceae, Caesalpiniaceae, Musaceae, Sapindaceae, Sapotaceae, Mimosaceae, Meliaceae, Asteraceae, Zygophyllaceae, Malvaceae, Poaceae, Moringaceae, Aristalochiaceae, Moraceae, Vitaceae, Caricaceae, Arecaceae, Commelinaceae, Rubiaceae, Annonaceae are represented by one member each.

The most dominant genera of the study area are *Ocimum* and *Solanum* which include 3 species. It is followed by *Piper*, *Phyllanthus*, *Jatropha* and *Cassia* having 2 species each. The remaining 48 genera are represented by single species.

Several plants are used by the people directly, because most of the people in the study area know about the uses of common medicinal plants. For simple wounds, cuts etc. the people never go to hospital or to herbal doctors. For, example, the people squash the leaves of *Tridax procumbens* or *Hyptis suaveolens* etc. and apply the juice over the wound directly and get cure.

Different plant parts such as bark, seed, fruit, latex, flowers, whole plants, rhizome and roots are used for the preparation of herbal medicine to cure different diseases. Bark from 3 plants, seed from 1 plant, fruit from 3 plants, latex from 5 plants, flower from 5 plants, 5 whole plants, leaves and stem from 4 plants, Stem alone from 2 plants, Rhizome alone from 2 plants, Root and Leaves from 1 plant were used to treat various diseases.

The present observation revealed that different types of disease such as cuts, wound, stomach pain, swelling, skin problem, kidney stone, cough and cold, asthma, headache, eye disease, animal bite, fever, jaundice, joint pain, leg pain, throat problem, chicken pox, urinary disease, body coolant, cancer, swelling, ear ache, ringworm and hair problem are cured by 62 medicinal plants. Plant based traditional knowledge has become a recognized tool in search for new sources of drugs and nutraceuticals. The traditional use of plants has declined due to the scarcity of species, which is caused by human activities and over grazing by animals. Therefore, it has become essential and need of the hour to focus on conservation of these plants. Internal uses (59.67%) were predominance over external or topical uses (40.32%). For external or topical uses, the most important methods used were direct application of paste or with oil and mostly dealt with diseases like skin diseases, cuts and wounds, poison bites, rheumatisms, body pain, swellings and headache. Most of the medicines were given orally which were also suggested by some workers in the world^[11-12].

Traditional healers have good knowledge about the use of many plants. They believe that all afflictions are caused by supernatural forces. They use their eyes, ear, nose and hands to diagnose the diseases this way of diagnose is interesting because they live in interior areas and lack the use of modern scientific equipment for treatment, they however treat



diseases using medicinal plants, herbal medicines prescribed by tribal healers are either preparation based on single plant part or a combination of several plant parts.

The ethnomedicinal studies evidently pointed out that, instead of trying to identify the active compounds and pharmacological actions of plants through massive collection of plants from natural sources, it is better to start investigating the efficacy of the plant based on their use in folk medicine were initially tried in crude form in traditional of folk healing practices ^[9].

4. CONCLUSION

The present study provided evidence that the medicinal plants continued to play an important role in the healthcare system of this community. This treasure of information is gradually

vanishing in the near future due to lack of interest among the younger generations of traditional healers as well as their tendency to migrate to cities for luxuriant jobs. Thus, the present study would be useful in preventing the loss of ethnomedicinal traditions of the particular area. The new claims which re-recorded from the study area showed that still much can be learned from investigating herbals available abundantly in the study area. These plants may indicate compounds and it requires a search for potential new drugs to treat various ailments.

Table -1: Enumeration of medicinal plants and their uses in Azhagiapandiapuram Panchayat

Sl. No.	Botanical Name / Family Name	Local name / Habit	Uses
1.	<i>Achyranthus aspera</i> (L.) Blume. Amaranthaceae	Naayuruvi / Herb	Leaves and stem ground well and made into paste. Paste is applied over the cuts and wounds for quick healing of the wounds.
2.	<i>Aloe vera</i> (L.) Burm. F. Liliaceae	Sotthukatthalai / Herb	Inner fleshy part of the leaf is made into paste, add a little amount of turmeric powder with the paste. This paste is applied over the skin to give coolness to the body. It also used to get relief from the burning sensation of the skin.
3.	<i>Alternanthera sessilis</i> (L.) R. Br. ex DC. Amaranthaceae	Ponnonkanni / Herb	Stem and leaves are ground along with a piece of ginger and garlic and the paste of gooseberry size is eaten orally for curing stomach disorder.
4.	<i>Amaranthus viridis</i> L. Amaranthaceae	Kuppaikeerai / Herb	Thoroughly washed whole plant is ground with little amount of Turmeric and the paste is applied. Over the pain areas of hand as a cure for hand pain.
5.	<i>Anacardium occidentale</i> L. Anacardiaceae	Kollampazham / Tree	Flower is mixed with cumin seeds and ocimum leaves, then boiled with water for about 5 minutes, filter it and is taken orally for curing small pox.
6.	<i>Andrographis paniculata</i> (Burm. f.) Wall. Acanthaceae	Nilavembu / Herb	Shade dried, powdered leaves are mixed with water and taken orally to cure diabetes and fever.
7.	<i>Annona squamosa</i> L. Annonaceae	Sithapalam / Tree	The leaf paste is applied on hair to reduce the Dandruff.
8.	<i>Aristolochia bracteolata</i> Lamk. Aristolochiaceae	Aduthennapalli / Climber	Leaf paste is applied externally for poisonous bites especially for scorpion sting.
9.	<i>Artocarpus heterophyllus</i> Lamk. Moraceae	Palamaram / Tree	The latex is applied over the wounds caused by an animal bites.
10.	<i>Azadirachta indica</i> A. Juss. Meliaceae	Vembu / Tree	Fresh leaves ground well and made into paste and mix little amount of Turmeric powder along with it, add and applied externally to cure chicken box
11.	<i>Boerhaavia diffusa</i> L. Nyctaginaceae	Mukkuratai / Climber	Leaves along with stem is ground and made into paste, it is taken orally in the empty stomach to cure asthma.
12.	<i>Calotropis gigantea</i> L. Asclepiadaceae	Erukku / Herb	The shade dried and powdered flower is mixed with a little amount of gingelly oil, it is applied over the wounds for healing.
13.	<i>Cardiospermum halicacabum</i> L. Sapindaceae	Mudakathan / Climber	Leaves, little amount of cumin seed, garlic are boiled water. Add a little amount of salt with it, filter the decoction and taken orally to cure joint pain. It also used to cure Rheumatism.
14.	<i>Carica papaya</i> L.	Pappali / Tree	The fruit and latex are made into paste and the raw paste is



	Caricaceae			taken orally for curing the swelling.
15.	<i>Cassia fistula</i> L.	Konnai / Tree		Leaves are ground well and made into paste. The paste is applied externally as a cure for snake bite.
	Fabaceae			
16.	<i>Cassia occidentalis</i> L.	Sudalai avarai / Herb		Leaves little amount of cumin seeds and few pieces of garlic are boiled with water filter it and the decoction is taken orally to remove kidney stone.
	Fabaceae			
17.	<i>Catharanthus roseus</i> L.	Nithya Kalyani / Herb		The shade dried whole plant powdered is mixed with honey and taken orally as a cure for cancer.
	Apocynaceae			
18.	<i>Cissus quadrangularis</i> L.	Pirandai / Climber		The stem is ground well and the paste is applied over the affected region to cure bone fracture.
	(Vitaceae)			
19.	<i>Citrus lemon</i> (L.) Obseck.	Elumichai / Tree		Lemon juice extracted from the fruit mixed with a cup of water and add necessary amount of salt, is used to control low blood pressure if taken orally
	(Rutaceae)			
20.	<i>Clitoria ternatea</i> L.	Sankupoo / Climber		The seed fried in ghee are powdered and given orally with hot water to cure joint pain.
	Fabaceae			
21.	<i>Cocos nucifera</i> L.	Thengu / Tree		The brownish sugary residue comes while preparing the oil from the fruit is used to cure black dots on the face it applied over the black dots
	Arecaceae			
22.	<i>Coleus aromaticus</i> Benth.	Karpuravalli / Herb		Leaf juice is taken orally once in a day for one week is used to get relief from urinary problems.
	Lamiaceae			
23.	<i>Commelina benghalensis</i> L.	Valaipachai / Herb		Leaves ground well and made into paste. The paste of is mixed with few drops of lemon juice and a pinch of turmeric powder. Apply this paste over a wound for quick healing.
	Commelinaceae			
24.	<i>Cucurbita pepo</i> L.	Pusanikai / Climber		Flowers, leaves of <i>Leucas aspera</i> and seeds of <i>piper nigrum</i> are boiled with water and prepare a decoction. The decoction is taken orally for curing cough and cold.
	Cucurbitaceae			
25.	<i>Curcuma longa</i> L.	Manjal / Shrub		A little amount of Turmeric powder is mixed with the boiled milk, if it is taken orally it is used to cure throat problem.
	Zingiberaceae			
26.	<i>Cynodon dactylon</i> L. pers.	Arugampul / Herb		In every morning extract of the whole plant is taken orally in the empty stomach to is good to reduce the body heat.
	Poaceae			
27.	<i>Euphorbia hirta</i> L.	Amman pacharissi / Herb		Latex is applied over the pimples to heal the pimples.
	Euphorbiaceae			
28.	<i>Gomphrena globosa</i> L.	Vadamalli / Herb		Fresh juice of leaves is as used for eye disease. The extract obtained from the leaves is used as a drop for eye diseases.
	Amaranthaceae			
29.	<i>Heliotropium indicum</i> L.	Thelkodukku / Herb		Leaves ground well and made into paste add a few drops of lemon juice. Apply the paste over the infected region of ringworm.
	Boraginaceae			
30.	<i>Hibiscus rosa-sinensis</i> L.	Sembaruthi / Shrub		The flower is boiled with water and the decoction is consumed regularly; it helps to reduce the body temperature.
	Malvaceae			
31.	<i>Ixora coccinea</i> L.	Idlipoo / Shrub		The flowerets, few onion bulbs and cumin seeds are boiled with water and the decoction is taken orally as a cure for asthma.
	Rubiaceae			
32.	<i>Jatropha curcas</i> L.	Kaatamanakku / Shrub		Handful of leaves 10 mg of cumin seeds and few pieces of garlic are boiled with water, and the decoction is taken orally for curing muscles pain.
	Euphorbiaceae			
33.	<i>Jatropha gossypifolia</i> L.	Amanakku / Shrub		The fresh fruit is ground and made into paste and the paste is applied externally on the foot region is used as a cure for foot pain.
	Euphorbiaceae			
34.	<i>Justicia adhatoda</i> L.	Adhatoda / Shrub		The leaves are ground with little amount of turmeric few pieces of garlic, few onion bulbs and few drops of lemon, and made into paste. The paste is applied externally over the infected region of ring worm.
	Acanthaceae			
35.	<i>Lantana camara</i> L.	Unnichedi / Shrub		Decoction of root is used as mouth wash.
	Verbenaceae			
36.	<i>Lawsonia inermis</i> L.	Maruthani / Shrub		If the leaf extract is applied over the hair, it is used to cure hair fall. It also used to change the white hair into black hair.
	Lythraceae			
37.	<i>Leucas aspera</i> (Willd.) link.	Thumbai / Herb		Leaves ground and made into the paste, apply over the head to cure head ache.
	Lamiaceae			
38.	<i>Mangifera indica</i> L.	Mamarum /		The stem bark is soak in water for one week and filter it. It



	Anacardiaceae	Tree	is used to cure menstrual problems if taken orally.
39.	<i>Manlikara zapoda</i> L.	Sapoda / Tree	Apply the latex on the cut and wounds for quick healing.
	Sapotaceae		
40.	<i>Mimosa pudica</i> L.	Thootalsurungi / Herb	Leaves ground and made into paste and paste is applied over the nose and chest region to get relief from cough and cold.
	Mimosaceae		
41.	<i>Momordica charantia</i> L.	Pagarkai / Climber	The leaves are boiled with water and little amount of cumin seeds, few pieces of Garlic and necessary amount of salt. The decoction is taken orally for curing fever.
	Cucurbitaceae		
42.	<i>Moringa oleifera</i> Lamk.	Murungai / Shrub	The fruits and leaves are cooked as vegetables. Handful of leaves along with long of coriander seeds are boiled with water. The decoction is filtered and consumed twice a day for two to cure all the pains of pregnant women. It also increases the hemoglobin in the blood.
	Moringaceae		
43.	<i>Murrya koeinigii</i> (L.) Spreng.	Karuvapilai / Tree	Leaves ground into paste and apply as a cure for dog bite.
	Rutaceae		
44.	<i>Musa paradisiaca</i> L.	Valaimarum / Tree	Pseudostem is crushed the extract obtained is taken orally as a cure for kidney stones.
	Musaceae		
45.	<i>Ocimum basilium</i> L.	Tiruneetru pachhilai / Herb	Decoction of the whole plant is taken orally for curing cough and cold 5 to 10 leaves are crushed and the extract obtained is taken orally to cure cough and cold
	Lamiaceae		
46.	<i>Ocimum sanctum</i> L.	Tulasi / Herb	Leaves juice is taken orally in empty stomach to cure the cold.
	Lamiaceae		
47.	<i>Ocimum tenuiflorum</i> L.	Karuthulasi / Herb	Leaves and seeds are grained with Black pepper and given orally for the pregnant ladies to cure leg pain and swellings of the leg.
	Lamiaceae		
48.	<i>Phyllanthus emblica</i> L.	Nellikai / Tree	Coconut oil is boiled with cumin seeds and leaves of Murrya koeinigii and flowers of Hibiscus rosa-sinensis. Finally, and the crushed fruits of Phyllanthus emblica. This oil is used as hair oil it used to control hair fall problems. Fruits are edible it is rich in vitamin C. The fruit extract is taken orally in the empty stomach as a cure for diabetes.
	Euphorbiaceae		
49.	<i>Phyllanthus niruri</i> L.	Keezhanelli / Herb	Handful of leaves are boiled with water and the decoction is taken orally in the empty stomach for curing jaundice.
	Euphorbiaceae		
50.	<i>Piper betal</i> L.	Vettilai / Climber	Petal stalk, cardamom seed and clove are ground well, made into paste and it is applied over the fore head to cure headache.
	Piperaceae		
51.	<i>Piper nigrum</i> L.	Nalla Milaku / Climber	Seed powder is mixed with fresh water and made into paste it is mixed with honey and taken orally as a cure for fever.
	Piperaceae		
52.	<i>Psidium guajava</i> L.	Koyya / Tree	The leaves are crushed well and the extract can be used as drop for ear ache.
	Myrtaceae		
53.	<i>Punica grandium</i> L.	Mathulai / Tree	The fresh juice extracted from the ripened fruit is taken orally to cure stomach pain
	Lythraceae		
54.	<i>Solanum nigrum</i> L.	Manathakkali / Herb	Leaf paste is applied externally to cure the skin disease and ring worm
	Solanaceae		
55.	<i>Solanum trilobatum</i> L.	Thoothuvilai / Herb	The dried powdered leaf is mixed with water and taken orally in empty stomach for curing cold
	Solanaceae		
56.	<i>Solanum xanthocarpum</i> L.	Kandankathiri / Herb	The leaves or fruit ground well and made into paste. The paste is applied externally over the skin to prevent skin diseases.
	Solanaceae		
57.	<i>Syzygium cumini</i> (L.) Skeets.	Navalmaram / Tree	Stem bark is soak in water for a week and filter it. If it is taken orally in the empty stomach it is used to cure stomach problem.
	Myrtaceae		
58.	<i>Tamarindus indica</i> L.	Puliamaram / Tree	Leaves ground and made into paste the paste is applied over the body to get relief from body pain.
	Caesalpiniaceae		
59.	<i>Tribulus terrestris</i> L.	Nerunji Mull / Herb	The fruit powder mixed with honey and milk and made a juice, it is taken orally for curing kidney stone.
	Zygophyllaceae		
60.	<i>Tridax procumbens</i> L.	Vettukaya Patchalai / Herb	Paste of leaves and root is applied externally over the wounds for quick healing.
	Asteraceae		
61.	<i>Vitex negundo</i> L.	Nochi / Tree	The leaves ground into paste and apply over the head as a



62.	Verbinaceae <i>Zingiber officinale</i> Roscus. Zingiberaceae	Ingi / Herb	cure for headache Crush the Zingiber underground stem and mix the honey in the ratio of 1:1 and it is consumed orally to cure wheezing.
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