



A Report of Medicinal Plants Used by the Residents of Arumanalloor Panchayat of Kanniyakumari, Tamilnadu, India

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<p>CC License CC-BY-NC-SA 4.0</p>	<p style="text-align: center;">Abstract</p> <p>Plants are used to treat and prevent diseases in a different way. As a result, the purpose of this paper is to document the traditional knowledge of medicinal plants from the Arumanalloor panchayat of Kanniyakumari District which may be used by the local inhabitants to treat a variety of diseases. In total, 83 plant species representing 69 genera and 36 families have been documented. Herbs are commonly used by the people and trees as well. Nearly 43% of the collected medicinal plants were consumed from the leaves. Hence, this study emphasizes the potential of ethnomedicinal surveys and the need to document traditional ecological knowledge concerning the use of medicinal plants.</p>
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INTRODUCTION

Plant-based medicines have gained popularity due to their perceived effectiveness, affordability, and availability. Many individuals in developing countries rely on these traditional remedies to treat a wide range of ailments, including common illnesses, chronic conditions, and even some infectious diseases. These plant drugs are often seen as a viable alternative to expensive and inaccessible modern medicine. Many ailments have been treated and prevented using plants since ancient times [1].

Traditional medicine is indispensable for the survival of 80% of the world's population, according to the World Health Organization [2]. The use of medicinal plants is prevalent among all divisions of the population, either directly or indirectly [3]. Due to its megadiversity, India has a long history of ethnobotany and traditional knowledge regarding the therapeutic use of plants [4,5].

The drive of our study was to envoir and document the medicinal plants used to treat various ailments by the local inhabitants reside in Arumanalloor village of Thoivalai Taluk positioned in the southern tip of Western Ghats region of Kanyakumari District, Tamil Nadu, India. Geologically the study area was surrounded by hillocks and reserved forest regions. This paves a strong way to rely on indigenous plant medicine.

MATERIALS AND METHODS

The Western Ghats, a UNESCO World Heritage Site, is a mountain range that runs parallel to the western coast of India. It is known for its rich biodiversity and is recognized as one of the world's eight "hottest hotspots" of

biological diversity. The southern tip of the Western Ghats in Kanyakumari District is particularly significant due to its unique ecological characteristics and the presence of numerous medicinal plants. In Tamilnadu, as the southernmost part of the Western Ghats, Kanyakumari District is located between 77° 15' and 77° 36' east at longitude and 8° 03' to 8° 35' north at latitude. It covers an area of 1684 square kilometers.

Arumanalloor village comes under Thovalai taluk of Kanyakumari district. The people of Arumanalloor village are predominantly inhabited by indigenous communities who have a deep understanding of the local flora and its medicinal properties. The survey findings revealed a rich repository of traditional medicinal knowledge, with a wide range of plants being utilized for various health conditions. The documented information will contribute to the preservation and promotion of traditional medicinal practices in the region. This geographic positioning grants the region a unique setting, with various bodies of water defining its boundaries.

The local villagers are the informants, they provided the vernacular names of the plants, and the specimens were collected, prepared into herbariums, identified using regional floras [6-10], and finally verified by comparing them to the authenticated specimens in the Herbarium of Jawaharlal Nehru Tropical Botanic Garden Research Institute, Palode, Thiruvananthapuram, India. Numbers were assigned to each voucher specimen and they were deposited in the Research Department of Botany at Holy Cross College, Nagercoil, Kanyakumari, Tamil Nadu.

RESULTS AND DISCUSSION

A total of 83 medicinally important plants distributed in 36 families which are traditionally used by the local villagers of the Arumanalloor village is documented. Botanical name, family name, vernacular name, habit, parts used and medicinal benefits were listed for all the plants recorded in the study.

About 83 plant species belongs to 69 genera of 36 families were documented. Malvaceae (6 species) was the family representing with highest species followed by Fabaceae (5 species), Solanaceae and Euphorbiaceae. In regard with the life form of the plant species herbs with 48% followed by trees (24%), climbers (15%), shrubs (11%), creepers and runners (1% each).

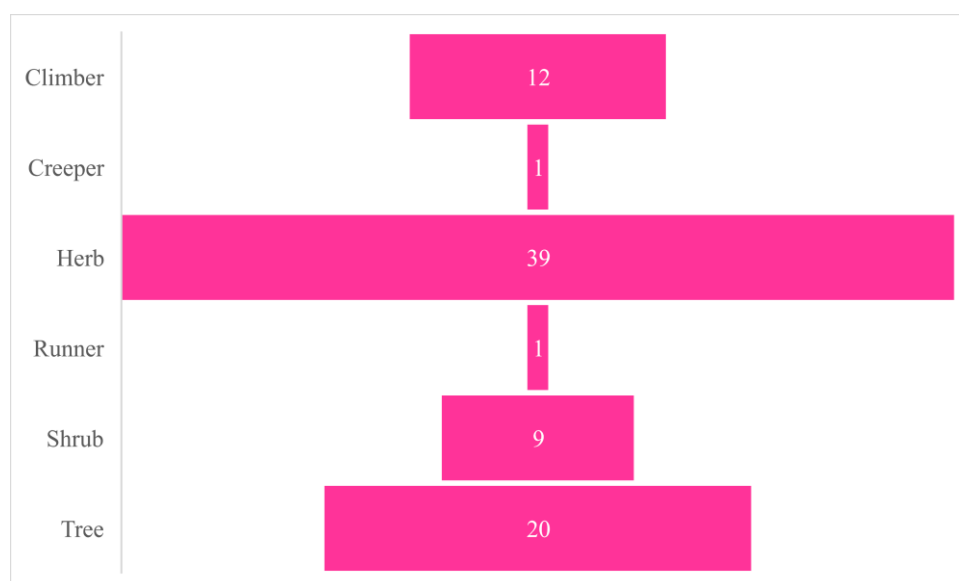


Fig.1 Life form distribution of medicinal plants in the study area

A majority of 43% of leaves were used for their medicinal properties, while 16% of fruits were used as well. When compared with other plant parts, leaves are very easy to collect, which is why they were collected most often [11] About 7% were used as whole plant which was continued with 6% of rhizome, fruits and leaves. Unopen flower buds, seeds, roots, leaves and rhizome, inner stem possess minimal usage.

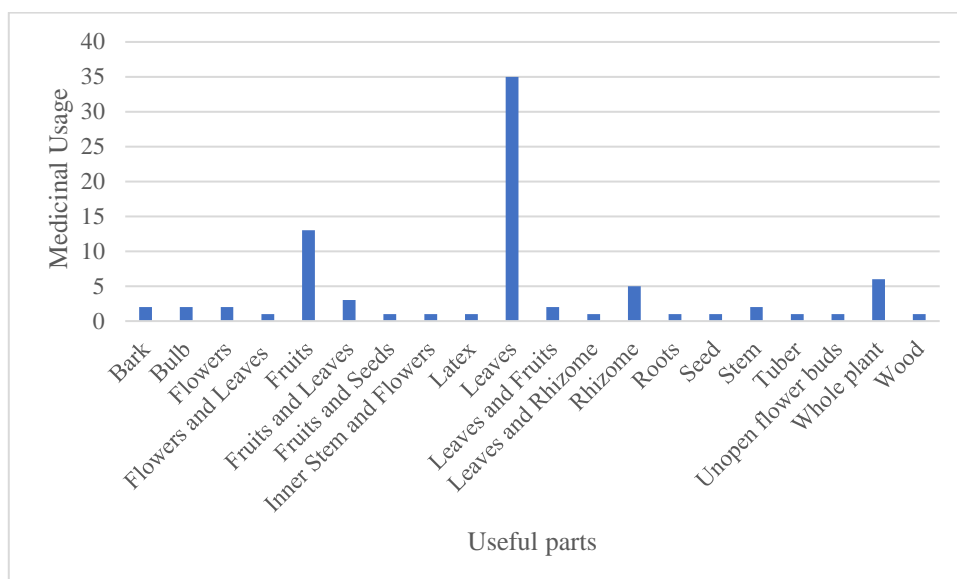


Fig. 2 Mode of medicinal plant usage in the study area

Table 1: List of medicinal plants used by the inhabitants of Arumanalloor Panchayat, Kanyakumari District

Botanical name	Family name	Local name	Life-form	Parts used	Medicinal benefits
<i>Annona muricata</i> L.	Annonaceae	Mulluseethapazham	Tree	Fruits and Leaves	Fruits are edible and leaves are used to treat insect bites and skin irritations
<i>Annona squamosa</i> L.	Annonaceae	Seethapazham	Tree	Fruits and Leaves	Fruits are rich in vitamin C, which is consumed by diabetic patients and leaves are used to treat insect bites and skin irritations
<i>Anamirta cocculus</i> (L.) Wight & Arn.	Menispermaceae	Kakka kolyvirai	Climber	Fruit	Unripen fruit paste is used to treat skin diseases
<i>Cyclea peltata</i> (Burm.f.) Hook.f. & Thomson	Menispermaceae	Ponmusukkattai	Climber	Leaves	Leaf paste is eaten to cure chicken pox
<i>Moringa oleifera</i> Lam.	Moringaceae	Murungamaram	Tree	Leaves	Leaf soup is used to cure fever and cold. Young leaves were crushed to treat skin itching
<i>Hybanthus enneaspermus</i> L.	Violaceae	Orithalthamarai	Herb	Whole plant	Leaves are used to treat wounds
<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Thuthi	Herb	Leaves	Leaves are eaten raw to treat piles
<i>Azanza lampas</i> (Cav.) Alef.	Malvaceae	Kattuparuthi	Tree	Leaves	Leaves are used to treat wounds
<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Sembaruthi	Shrub	Flowers	Dried flower petals are used in hair oil preparation
<i>Sida acuta</i> Burm.f.	Malvaceae	Kurunthotti	Herb	Leaves	Leaf juice is used to prepare hair oil
<i>Sida cordifolia</i> L.	Malvaceae	Arivaalmanaipoondu	Herb	Leaves	Leaf juice is used to prepare hair oil

<i>Thespesia populnea</i> (L.) Sol. ex Correa	Malvaceae	Poovarasu	Tree	Flowers and Leaves	Leaf paste is applied to treat swellings and skin diseases
<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Karuvaepilai	Tree	Leaves	Lemon sized leaf paste is consumed by diabetic patients. Dried and fresh leaves are used in hair oil preparation
<i>Azadirachta indica</i> A. Juss.	Meliaceae	Vembu	Tree	Leaves	Decoction prepared using the young leaves are used to treat cough
<i>Naregamia alata</i> Wight & Arn.	Meliaceae	Nilanaragam	Herb	Leaves	Leaves are used to prepare an oil which is used to treat rheumatism
<i>Cissus quadrangularis</i> L.	Vitaceae	Pirandai	Climber	Stem	Stem enhances bone health
<i>Cardiospermum helicacabum</i> L.	Sapindaceae	Mudakaruthankodi	Climber	Whole plant	Whole plant is used to massage and relieve bone problems
<i>Abrus precatorius</i> L.	Fabaceae	Kundu mani	Climber	Seed	Dried seed powder is used to treat common skin problems and itching
<i>Indigofera tinctoria</i> L.	Fabaceae	Avuri	Herb	Whole plant	Whole plant is used in oil preparation, which is used to treat rheumatism and bone related problems
<i>Mimosa pudica</i> L.	Fabaceae	Thotalsinigi	Herb	Leaves	Leaf paste is applied to treat swellings
<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Pungamaram	Tree	Bark	Bark with sesame oil is used to treat skin diseases
<i>Saraca asoca</i> (Roxb.) W.J.de Wilde	Fabaceae	Asogam	Tree	Bark	Bark is used to treat menstrual problems
<i>Senna alata</i> (L.) Roxb.	Caesalpiniaceae	Seemaiagathi	Shrub	Leaves	Leaf paste is applied to treat skin diseases
<i>Senna auriculata</i> (L.) Roxb.	Caesalpiniaceae	Avaram	Shrub	Flowers	Dried flower powder is used to treat wounds in diabetic patients
<i>Senna occidentalis</i> (L.) Link	Caesalpiniaceae	Peyavarai	Herb	Leaves	Leaf paste is applied to treat skin diseases
<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Ranakalli	Herb	Leaves	Leaf juice is used to treat kidney stones
<i>Lawsonia inermis</i> L.	Lythraceae	Marudhani	Tree	Leaves	Leaf paste is used to treat skin diseases and hair oil preparation
<i>Punica granatum</i> L.	Lythraceae	Maadhulai	Tree	Fruits	Fruits are eaten to increase blood count
<i>Carica papaya</i> L.	Caricaceae	Pappaali	Tree	Fruits and Leaves	Young leaf juice was consumed to cure fever
<i>Coccinia grandis</i> (L.) Viogt	Cucurbitaceae	Kovaikaai	Climber	Fruits	Fruits are consumed by diabetic patients
<i>Momordica charantia</i> L.	Cucurbitaceae	Paagarkaai	Climber	Fruits	Fruit juice is consumed by diabetic patients

<i>Mukia maderaspatana</i> (L.) M. Roem.	Cucurbitaceae	Musumusukkai	Climber	Leaves	Leaves are used in hair oil preparation
<i>Centella asiatica</i> (L.) Urb.	Apiaceae	Vallarai	Runner	Leaves	Leaves are edible and leaf paste with coconut milk is used to enhance memory power
<i>Canthium coromandelicum</i> (Burm.f.) Alston	Rubiaceae	Kaaraiakaai	Shrub	Fruits	Leaf paste is applied externally to treat skin diseases
<i>Chromolaena odorata</i> (L.) R.M.King & H. Rob.	Asteraceae	Muriyanpachilai	Herb	Leaves	Crushed leaves are used to treat cuts and wounds
<i>Eclipta prostrata</i> L.	Asteraceae	Karisalankanni	Herb	Leaves	Leaves are used in hair oil preparation
<i>Tridax procumbens</i> (L.) L.	Asteraceae	Muriyanpachilai	Herb	Leaves	Crushed leaves are used to treat cuts and wounds
<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Mukkampalai	Tree	Stem	Latex obtained from the leaves is used to remove warts and blackspots
<i>Pergularia daemia</i> (Forsskal) Chiov.	Apocynaceae	Vaeliparuthi	Climber	Leaves	Leaf paste is applied to treat skin rashes and swellings
<i>Calotropis gigantea</i> (L.) W.T.Aiton	Asclepiadaceae	Eruku	Shrub	Latex	Latex is used to get rid of thorns inside the skin
<i>Hemidesmus indicus</i> (L.) R.Br. ex Schult.	Asclepiadaceae	Nannari	Climber	Roots	Roots are used to treat wounds
<i>Capsicum frutescens</i> L.	Solanaceae	Kaanthaari milagu	Herb	Fruits	Fruits help to maintain blood pressure
<i>Datura metel</i> L.	Solanaceae	Karuoomathai	Herb	Fruits	Fruits are used to prepare oil which is used to treat joint pain
<i>Datura stramonium</i> L.	Solanaceae	Oomathai	Herb	Fruits	Fruits are used to prepare oil which is used to treat joint pain
<i>Solanum nigrum</i> L.	Solanaceae	Manathakkali	Herb	Leaves and Fruits	Leaves and fruits are consumed to cure stomach ulcers
<i>Solanum trilobatum</i> L.	Solanaceae	Kandankathari	Herb	Leaves	Leaf soup is used to cure fever, cough and cold.
<i>Adathoda vasica</i> Nees	Acanthaceae	Aadathodai	Shrub	Leaves	Leaves are used to treat cough and cold
<i>Andrographis paniculata</i> (Burm. fil.) Nees	Acanthaceae	Nilavembu	Herb	Leaves	Decoction of the leaf powder is used to treat whooping cough, headache, cold and fever
<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	Vathamudaki	Shrub	Leaves	Leaves are used to prepare oil to treat rheumatic disorder
<i>Rhinacanthus nasutus</i> (L.) Kurz	Acanthaceae	Nagamalli	Herb	Leaves	Leaves are used to treat swellings and skin diseases
<i>Vitex negundo</i> L.	Verbenaceae	Nochi	Shrub	Leaves	Leaves are boiled with other leaves like <i>Ocimum sanctum</i> and

					<i>Azadirachta indica</i> the vapour is inhaled to cure cough and cold
<i>Coleus aromaticus</i> Benth.	Lamiaceae	Karpooravalli	Herb	Leaves	Leaf juice is used to treat cough and hair oil preparation
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thumbai	Herb	Whole plant	Leaf juice is used to prepare hair oil preparation
<i>Ocimum gratissimum</i> L.	Lamiaceae	Elumitchai Thulasi	Herb	Leaves	Leaf decoction with palm candy, coriander seeds, dried ginger, black pepper is used to treat severe cough, cold and fever
<i>Ocimum sanctum</i> L.	Lamiaceae	Nalla Thulasi	Herb	Leaves	Leaf decoction with palm candy, coriander seeds, dried ginger, black pepper is used to treat severe cough, cold and fever
<i>Psidium gujava</i> L.	Myrtaceae	Koyya	Tree	Leaves and Fruits	Leaf decoction is consumed by diabetic patients
<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Navalpalam	Tree	Fruits and Seeds	Fruits are edible and the dried seed powder is consumed by diabetic patients
<i>Syzygium caryophyllatum</i> (L.) Alston	Myrtaceae	Kirambu	Clove	Unopen flower buds	Unopen flower buds are used to treat toothache
<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	Aduthinnappalai	Herb	Leaves	Leaf paste is applied to treat swellings and skin diseases
<i>Piper betle</i> L.	Piperaceae	Vettilai	Creep er	Leaves	One medium sized leaf with 2 black pepper corns is eaten for poisonous bites
<i>Piper longum</i> L.	Piperaceae	Thippili	Herb	Fruits	Dried fruits are used to cure cough and cold
<i>Piper nigrum</i> L.	Piperaceae	Nallamilagu	Climb er	Fruits	Dried fruits are used to cure cough, cold and indigestion problems
<i>Santalum album</i> L.	Santalaceae	Sandhanam	Tree	Wood	Paste obtained from the wood is used to cure pimples and enhances skin glow
<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimeni	Herb	Leaves	Leaf decoction is used to treat cough and cold
<i>Croton bonplandianus</i> Baill.	Euphorbiaceae	Railpoondu	Herb	Leaves	Leaf paste is applied to treat swellings and skin diseases
<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Nellikaai	Tree	Fruits	Fruits are edible and rich in Vitamin C
<i>Phyllanthus niruri</i> L.	Euphorbiaceae	Keezhanelli	Herb	Whole plant	Whole plant is used to treat jaundice

<i>Cnidocolus aconitifolius</i> (Mill.) I.M.Johnst.	Euphorbiaceae	Marapasalai	Shrub	Leaves	Leaves are edible and consumed by diabetic patients
<i>Alpinia galanga</i> L.	Zingiberaceae	Chittaraththai	Herb	Rhizome	Rhizome is used to treat microbial infections in skin
<i>Curcuma aromatica</i> Salisb.	Zingiberaceae	Kasthuri manjal	Herb	Rhizome	Rhizome is used to treat foot cracks and enhances skin glow
<i>Curcuma longa</i> L.	Zingiberaceae	Manjal	Herb	Rhizome	Dried rhizome powder with rock salt is boiled and used to treat swellings and inflammations
<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Inji	Herb	Rhizome	Rhizome is used to treat cold, cough and digestion problems. Dried rhizome is used to prepare decoction to cure severe cough
<i>Hellenia speciosa</i> (J.Koenig) S.R.Dutta	Costaceae	Malaiwasambu	Herb	Leaves and Rhizome	Leaves and rhizome are used to treat skin diseases and urinary disorders
<i>Musa paradisiaca</i> L.	Musaceae	Vazhai	Herb	Inner Stem and Flowers	Inner part of the stem is consumed to treat kidney stones.
<i>Curculigo orchioides</i> Gaertn.	Hypoxidaceae	Nilapanai	Herb	Tuber	Tuber is used to treat jaundice
<i>Allium cepa</i> L.	Liliaceae	Ulli	Herb	Bulb	Bulb is used to stop bleeding in cuts and wounds. Applied topically to treat wasp sting or poisonous bites
<i>Allium sativum</i> L.	Liliaceae	Veluthulli	Herb	Bulb	Bulb is used to cure digestive disorders
<i>Aloe vera</i> L.	Liliaceae	Sotru katrallai	Herb	Leaves	Gel from the leaves are applied in hair to avoid dandruff
<i>Gloriosa superba</i> L.	Liliaceae	Chenkaanthal Poo	Climber	Rhizome	Rhizome is used to treat snake bites and scorpion bites
<i>Areca catechu</i> L.	Arecaceae	Kamugu	Tree	Fruits	The water soaked with the fruit was used to treat burns
<i>Cocos nucifera</i> L.	Arecaceae	Thennai	Tree	Fruits	Coconut milk enhances digestion.
<i>Cynodon dactylon</i> L.	Poaceae	Arugam pull	Herb	Whole plant	Leaf juice is good for diabetic patients

Plant like *Indigofera linnaei*, *Helicteres isora*, *Tephrosia purpurea* and *Vitex negundo* were harvested from the nearby hillocks as well as from the households and sold to the nearby traditional medicinal practitioners by the local inhabitants. The method of preparation falls into different categories plant parts used in the form of juice, powder, decoction, ground paste, extract, eaten fresh and orally, infusion, cooked and soaked. Earlier report states that the preparation of paste for the treatment of ailments is a common method in tribal communities worldwide [12]. The preparation of most medicines includes some plant parts and other ingredients such as

salt, ghee, or oil [13]. Based on the findings, most of the plants used in the study were readily available, and the preparation method was simple.

CONCLUSION

Research on ethnomedicine must be persistently conducted for proper cultivation, conservation and documentation of valuable traditional medicinal plants must be undertaken to meet professional requirements. In order to develop better drugs for chronic illnesses, it is imperative to share traditional knowledge on plant-based medicines. With high medicinal benefits, it will play a key role in the discovery of new drugs and pharmaceutical products. Moreover, it helps to determine the appropriate dosage and quantity of drugs for people in all aspects.

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