

# Indigenous Medicinal Plant Knowledge of Rural Communities in Adambar-II Village, Tamil Nadu: An Ethnobotanical Approach

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## Abstract

*Ethnobotanical knowledge is significantly involved within primary healthcare systems of rural communities, specifically in developing nations where traditional plant-based remedies are extensively practiced. The objective of present research was to record indigenous medicinal plant knowledge of rural communities of Adambar-II village in Tiruvarur district, Nannilam Taluk, Tamil Nadu, India, and to examine diversity, phytochemical significance, and therapeutic use of recorded species. Field surveys were conducted as ethnobotanical data, semi-structured interviews were collected, and discussions with local informants such as village elders and traditional healers. A total of 81 species of medicinal plants of 73 genera and 38 families were recorded. Fabaceae and Poaceae were most dominant among recorded families. Habit analysis showed that the highest percentage of medicinal plants was herbs, followed by trees, shrubs, climbers. The most common parts of plants used in traditional remedies were leaves, followed by fruits, roots, seeds, bark. The plants were documented to treat a broad spectrum of diseases, the most treated diseases were digestive disorders, skin diseases, respiratory ailments, metabolic diseases like diabetes. Phytochemical studies using literature suggested that these plants contained biologically active compounds, including alkaloids, flavonoids, tannins, terpenoids, glycosides which confirmed therapeutic properties of these plants. The paper demonstrates richness of traditional medicinal knowledge in study area and necessity to document, preserve, conduct further pharmacological research on these medicinal plant resources.*

**Keywords:** Ethnobotany, Medicinal plants, Indigenous knowledge, Phytochemicals, Rural healthcare.

## 1. INTRODUCTION

Ethnobotany is an interdisciplinary science that discovers the relations between some human groups and plants, especially the way that indigenous societies use plant materials in food, medicine, shelter, and cultural activities. Medicinal plants were part of traditional medical care systems as early as ancient times, and their utilization has become important even in primary care to millions of individuals globally. The World Health Organization reports that almost 80% of the total population in developing countries uses traditional plant-based medicines as basic healthcare needs [1]. Such reliance is specifically important in rural and remote areas where access to modern medical facilities is limited. So, documentation of indigenous knowledge associated with medicinal plants has become crucial area of scientific study in ethnobotany, pharmacology and biodiversity conservation. India is recognized as one of world's richest countries in terms of biodiversity as well as traditional medicinal knowledge. The country has enormous reservoir of medicinal plants used in different traditional medicine systems such as Ayurveda, Siddha, Unani, folk medicine. There are roughly > 7,000 species of plants used in traditional medicine in India [2]. Rural communities and indigenous groups have gained extensive knowledge on medicinal properties of

plants, and such knowledge has been gained through generations of observation, experimentation, transmission of culture. This indigenous knowledge is not only useful in community healthcare but also good source of modern drug discovery and pharmacological study [3].

Ethnobotanics are also essential in preserving valuable traditional knowledge that might otherwise be destroyed by urbanisation, socio-economic change, modernization. Rapid globalisation, migration, and increasing effects of allopathic medicine have decreased transmission of indigenous knowledge significantly to younger generations of rural communities [4]. Many traditional forms of medicinal practices are likely to be lost forever as elders who hold this knowledge die without transferring it. Therefore, to maintain and scientifically confirm medicinal uses of plants by local communities, systematic ethnobotanical surveys are necessary. Tamil Nadu is a state in southern India, also referred to as a great cultural heritage and long-standing practice of plant-based medicine, especially in Siddha medical system. There are various vegetation types that grow in State, such as tropical dry evergreen forests, wetlands, agricultural landscapes, coastal ecosystems and so on, all of which sustain a vast array of medicinal plant species [5]. Ethnobotanical research conducted in various regions of Tamil Nadu has shown medicinal uses of many plant species used by rural and tribal communities in treatment of several ailments, such as skin disorders, fever, gastrointestinal disorders, respiratory infections, inflammatory conditions [6, 7]. This study emphasizes significance of local biodiversity in preserving traditional healthcare practices. Even with increasing number of ethnobotanical research in Tamil Nadu, most of rural regions remain unexplored. Each locality tends to have its own plant resources and its own system of traditional knowledge which is determined by cultural practices, ecological conditions, availability to plant species. So, ethnobotanical surveys should be conducted at local level to obtain region-specific data on use of medicinal plant. These studies also assist in identification of species of plants which may have pharmacologically active compounds that can be used in modern medicine.

District Tiruvarur is fertile Cauvery delta area in Tamil Nadu, which is typified by extensive agricultural lands, irrigation canals, rural settlements. Region promotes diversity of medicinal plant species traditionally used by local people in healthcare. In this district, rural populations usually rely on available plant resources in area to treat common ailments due to economic limitations and lack of access to modern medical care. Nevertheless, ethnobotanical information linked to medicinal plants of most villages in this district has not been comprehensively documented. Adambar-II village in Nannilam Taluk is one of such rural localities where traditional knowledge about medicinal plants is still present among village elders, traditional healers, experienced farmers. The local people use different components of plants such as seeds, bark, roots, leaves, flowers, fruits to make herbal medicines to treat wide variety of health problems. The remedies are most commonly made through simple methods such as pastes, decoctions, infusion, powders. Traditional ecological knowledge of rural communities in sustaining health of people is demonstrated by continued reliance on plant-based remedies.

However, modernization of healthcare systems, rapid socio-economic transformation, changes in lifestyle are eventually leading to erosion of traditional ethnomedicinal knowledge in rural communities. Traditional practices are generally less interesting to younger generations, that threatens continuity of indigenous knowledge systems. Moreover, habitat loss, agricultural intensification, environmental degradation might also reduce availability of medicinal plant species in rural landscapes. Without proper documentation and conservation efforts, both knowledge and plant resources themselves might decline significantly. Although several ethnobotanical studies have been conducted in different regions of Tamil Nadu, there is still noticeable research gap in systematic documentation of medicinal plants utilised by rural communities in Adambar-II village of Nannilam Taluk, Tiruvarur district. Limited published information is available regarding diversity of medicinal plants, their traditional therapeutic applications, preparation methods, modes of administration practiced by local people in this region. Addressing this gap is crucial not only for preserving traditional knowledge, also for identifying plant species with potential pharmacological significance. Hence, ethnobotanical investigation in Adambar-II village is essential to systematically document indigenous medicinal plant knowledge possessed by rural communities. This documentation could contribute to the preservation of traditional healthcare practices, promote awareness about the importance of medicinal plant resources, and provide baseline data for future phytochemical and

pharmacological research. Additionally, understanding the relationship between local communities and plant resources might support sustainable conservation strategies for medicinal plant diversity. By documenting and preserving this valuable traditional knowledge, goal of study is contributing to broader field of ethnobotany, biodiversity conservation and sustainable utilization of medicinal plant resources.

## **2. MATERIALS AND METHODS**

### **Study Area**

The current research on ethnobotanical study has been carried out in Adambar-II village located in Nannilam Taluk of Tiruvarur District, Tamil Nadu, India. Tiruvarur district lies in Cauvery delta region, that is characterized by fertile alluvial soils as well as extensive agricultural landscape dominated by paddy cultivation. Region experiences a tropical climate with hot summers, moderate rainfall during northeast monsoon (October–December), mild winters. The average annual rainfall ranges between 1100 to 1300mm, that supports diverse vegetation comprising cultivated crops, weeds, roadside flora, medicinal plant species. Rural population of Adambar-II village primarily depends on agriculture and allied activities, and traditional knowledge of medicinal plants is commonly retained between elderly villagers, traditional healers, farmers. Locally available plants are frequently utilised to treat common ailments: fever, skin infections, digestive disorders, wounds, respiratory problems.

### **Ethnobotanical Survey and Data Collection**

Field surveys have been held from October 2025 to February 2026 to document the traditional medicinal plant knowledge of rural communities in Adambar-II village. Repeated field visits have been made to different habitats comprising agricultural fields, home gardens, roadside vegetation, fallow lands, and nearby water bodies to record medicinal plant diversity. Ethnobotanical information has been collected using semi-structured interviews, open-ended discussions, and participatory observations with local informants like village elders, traditional healers, farmers, knowledgeable residents. Informed consent has been obtained from participants before collecting information regarding plant usage. Information recorded during the survey included local name of the plant, plant habit, parts used for medicinal purposes and ailments treated. The ethnobotanical survey methodology followed standard procedures widely used in ethnobotanical research [4, 8, 9].

### **Collection and Identification of Plant Specimens**

A field survey was carried out to collect plant specimens that are said to be of medicinal value in the study area. The specimens collected were subjected to proper processing, pressing, drying and preservation of specimens using standard herbarium techniques [10]. Plant species were identified with the help of the regional floras, botanical manuals, and taxonomic keys. Relevant botanical literature and online plant databases were substantiated to verify scientific names, family names and nomenclature. Preparation and documentation of the voucher specimens were done with the collection of information such as location, habit, date of collection, local name. The identified plant species were also further identified by their families and growth habits, such as herbs, shrubs, trees, climbers.

### **Analysis of Plant Family Distribution**

The documented species of medicinal plants were classified according to the botanical family of the species to identify the dominant and the most abundant plant families in the area of study. The number of species that were in each individual family was analyzed and calculated to identify out the families that would have the greatest representation of medicinal plants. This kind of analysis gives information on the floristic composition and medical significance of botanical families within the region. Dominance of plant families in ethnobotanical lists has been extensively used as an indicator of plant diversity and conventional patterns of plant usage [11, 12].

### **Analysis of Plant Habit**

There were all the recorded medicinal plant species classified according to their growth habit, i.e. shrubs, herbs, trees, climbers. The proportion of each category of habits was used to determine the predominant type of growth of medicinal plants that were used by the local community. The ecological

availability and accessibility of medicinal plants can be understood by analysing the habitat because herbaceous species tend to be more abundant and easily collected than woody species [13].

#### **Phytochemical Information**

Information on key phytochemical constituents that exist in the documented medicinal plant species was compiled based on a comprehensive search of phytochemical and pharmacological publications in scientific journals and other usual medicinal plant literature. Phytochemical classes which were noted included flavonoids, alkaloids, phenolics, tannins, saponins, glycosides, terpenoids. The phytochemical analysis was not carried out experimentally but was based on secondary literature sources to relate the traditional medicinal use with the known bioactive compounds previously reported in earlier studies [14, 15].

#### **Plant parts usage**

To determine the frequency of plant part use, the number of the species using the plant part was recorded and tabulated. The simple descriptive analysis was then employed to get the relative frequency of various parts of plants that were used in traditional medicine. Investigation has been in terms of the number of species of a specific part of a plant, and data have been subsequently graphically represented by the utilisation of a bar chart to show the distribution pattern of plant part usage. Analysis contributes to determining most frequently utilised parts of plants in traditional healthcare practices and gives insights into harvesting and the sustainability of utilization of medicinal plants. Ethnobotanical studies done before have reported that the most commonly utilised parts of a plant are usually the leaves, which are readily available, and contain high concentration of secondary metabolites, and possibility of harvesting them without destroying the plant [7, 13].

#### **Documentation of Medicinal Uses**

The medical applications the informants mentioned were recorded and classified according to the kind of ailment that was treated, e.g., gastrointestinal diseases, skin diseases, respiratory illness, fever, infections, wounds and inflammation. Plant species were documented with the description of the part of the plant used, preparation mode, dosage form, and therapeutic use. Medicinal use cross-verification was conducted by discussing with various informants to enhance the credibility of the ethnobotanical information.

#### **Data Analysis**

These data were organized and analyzed in systematical ways with the help of descriptive statistics. The parameter measures were:

1. Distribution of plant species among different families
2. Percentage contribution of plant habits (herbs, shrubs, trees, climbers)
3. Frequency of plant parts used in traditional medicine
4. Major phytochemical groups reported in medicinal plants
5. Ailment category and medicinal plants

### **3. RESULTS AND DISCUSSION**

#### **Diversity of Medicinal Plants**

The ethnobotanical survey conducted in Adambar-II village, Nannilam Taluk, Tiruvarur district, Tamil Nadu documented 81 medicinal plant species belonging to 73 genera and 38 families (Table 1). The high diversity of medicinal flora recorded in the study area indicates the strong dependence of rural communities on plant-based remedies for primary healthcare. Most of the plants were collected from agricultural fields, fallow lands, roadside vegetation, wetlands, and home gardens, reflecting the agro-ecosystem-based vegetation typical of the Cauvery delta region. The continued reliance on medicinal plants by rural communities is consistent with global estimates that nearly 80% of the population in developing countries relies on traditional plant-based medicines for primary healthcare [1]. Ethnobotanical surveys conducted in other parts of Tamil Nadu have also reported similar levels of plant diversity used in folk medicine [5, 7].

**Table 1.** List of plants surveyed at Adambar – II Village, Nannilam, Tiruvarur, Tamil Nadu

Sl. No.	Botanical Name	Vernacular Name (Tamil)	Family	Habit	Parts Used	Important Phytochemicals	Medicinal Uses
1.	<i>Abelmoschus esculentus</i> (L.) Moench	Vendaikkai	Malvaceae	Herb	Fruit, immature pods	$\beta$ -carotene, lycopene, flavonoids, mucilage	Constipation, gastritis, cholesterol control
2.	<i>Abutilon indicum</i> (L.) Sweet	Thuthi	Malvaceae	Shrub	Root, leaf, seed	$\beta$ -sitosterol, vanillic acid, p-coumaric acid	Antidiabetic, diuretic, urinary disorders
3.	<i>Acalypha indica</i> L.	Kuppaimeni	Euphorbiaceae	Herb	Leaf, root	Acalyphine, flavonoids, $\beta$ -sitosterol	Anthelmintic, asthma, skin diseases
4.	<i>Ageratum conyzoides</i> L.	Appakodi	Asteraceae	Herb	Leaf, root	Pyrrrolizidine alkaloids, precocene I & II	Analgesic, diarrhea, wound healing
5.	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Ponnanganni keerai	Amaranthaceae	Herb	Leaf, stem	Stigmasterol, $\beta$ -sitosterol, rutin	Eye disorders, dyspepsia
6.	<i>Azadirachta indica</i> A. Juss.	Veppamaram	Meliaceae	Tree	Leaf, bark, seed	Azadirachtin, nimbin, quercetin	Antimicrobial, skin diseases, fever
7.	<i>Bambusa bambos</i> (L.) Voss	Moongil	Poaceae	Tree	Leaf, stem	Silica, flavonoids, phenolic acids	Diuretic, digestive tonic
8.	<i>Barleria prionitis</i> L.	Shemmulli	Acanthaceae	Shrub	Leaf, root	Iridoid glycosides, phenolics	Boils, cough, inflammation
9.	<i>Borassus flabellifer</i> L.	Panai maram	Arecaceae	Tree	Fruit, root	Flavonoids, tannins	Fever, digestive disorders
10.	<i>Casuarina equisetifolia</i> L.	Savukku maram	Casuarinaceae	Tree	Bark, leaf	Tannins, quercetin	Diarrhea, wound healing
11.	<i>Causonis trifolia</i> (L.) Mabb. & J.Wen (syn. <i>Cayratia trifolia</i> )	Kattu Pirandai	Vitaceae	Climber	Leaf, root	Quercetin, kaempferol	Diabetes, ulcers
12.	<i>Chloris barbata</i> Sw.	Kondai pul	Poaceae	Herb	Leaf	Phenolics	Fever, jaundice (folk use)
13.	<i>Chrozophora rotleri</i> (Geiseler) A. Juss. ex Spreng.	Pura pirakkai	Euphorbiaceae	Herb	Leaf, seed	Apigenin, rutin	Jaundice, skin diseases
14.	<i>Chrysopogon zizanioides</i> (L.) Roberty	Vettiver	Poaceae	Perennial grass	Root	Vetiverol, khusimol	Cooling agent, arthritis
15.	<i>Coccinia grandis</i> (L.) Voigt	Kovaikkai	Cucurbitaceae	Climber	Leaf, fruit	Cucurbitacins, quercetin	Antidiabetic, ulcers
16.	<i>Cocos nucifera</i> L.	Thennai	Arecaceae	Tree	Fruit, oil	Lauric acid, cytokinins	Skin infections, nutritive

17.	<i>Colocasia esculenta</i> (L.) Schott	Seppan kizhangu	Araceae	Herb	Corm, leaf	Anthocyanins, catechin	Digestive disorders
18.	<i>Calotropis gigantea</i> (L.) Dryand.	Erukku	Apocynaceae	Shrub	Leaf, latex	Calotropin, uscharin	Asthma, skin diseases
19.	<i>Crinum asiaticum</i> L.	Poison bulb	Amaryllidaceae	Herb	Bulb	Crinine alkaloids	Anti-inflammatory, earache
20.	<i>Croton bonplandianus</i> Baill. (syn. <i>C. bonplandianum</i> Morong)	Aathi poondu	Euphorbiaceae	Herb	Leaf	Flavonoids, terpenoids	Skin diseases
21.	<i>Cucumis maderaspatanus</i> L.	Musumusukkai	Cucurbitaceae	Climber	Fruit, root	Triterpenoids, flavonoids	Indigestion, flatulence
22.	<i>Cucumis melo</i> L.	Vellari	Cucurbitaceae	Climber	Fruit, seed	Carotenoids, cucurbitacins	Diuretic, cooling
23.	<i>Cyanthillium cinereum</i> (L.) H.Rob.	Puvamkurunthal	Asteraceae	Herb	Leaf	Luteolin, stigmasterol	Fever, liver disorders
24.	<i>Cyperus compactus</i> Retz.	Korai	Cyperaceae	Sedge	Rhizome	Essential oils, cyperene	Diarrhea, fever
25.	<i>Dalbergia sissoo</i> Roxb. ex DC.	Seesam	Fabaceae	Tree	Bark	Dalbergin, flavonoids	Skin diseases, ulcers
26.	<i>Datura stramonium</i> L.	Uumathai	Solanaceae	Herb	Leaf, seed	Atropine, scopolamine	Asthma
27.	<i>Ecballium elaterium</i> (L.) A. Rich.	Wild cucumber	Cucurbitaceae	Herb	Fruit	Elaterin, cucurbitacins	Edema, sinusitis
28.	<i>Echinochloa colona</i> (L.) Link	Kuthiraivali	Poaceae	Grass	Seed	Phenolic acids	Antidiabetic (folk)
29.	<i>Eclipta prostrata</i> L. (syn. <i>Eclipta alba</i> )	Karisalankanni	Asteraceae	Herb	Leaf	Wedelolactone, ecliptine	Liver disorders, hair growth
30.	<i>Ficus religiosa</i> L.	Arasa maram	Moraceae	Tree	Leaf, bark, fruit	Quercetin, kaempferol, $\beta$ -sitosterol	Diabetes, inflammation, wound healing
31.	<i>Gossypium herbaceum</i> L.	Paruthi	Malvaceae	Shrub	Seed, root bark	Gossypol, flavonoids	Dysmenorrhea, lactation disorders
32.	<i>Ipomoea aquatica</i> Forssk.	Thanner keerai	Convolvulaceae	Herb	Leaf, stem	Carotenoids, quercetin	Constipation, anemia
33.	<i>Ipomoea carnea</i> Jacq.	Kattamanakku	Convolvulaceae	Shrub	Leaf, latex	Swainsonine, calystegines	Skin diseases (external use)
34.	<i>Jatropha gossypifolia</i> L.	Kattu amanakku	Euphorbiaceae	Shrub	Leaf, seed	Jatrophone, lignans	Wound healing, anti-inflammatory
35.	<i>Justicia adhatoda</i> L.	Adathodai	Acanthaceae	Shrub	Leaf	Vasicine, vasicinone	Asthma, cough, bronchitis

	(syn. <i>Adhatoda vasica</i> )						
36.	<i>Lactuca virosa</i> L.	Kasappu keerai	Asteraceae	Herb	Leaf, latex	Lactucin, lactucopicrin	Sedative, headache relief
37.	<i>Lannea coromandelica</i> (Houtt.) Merr.	Uthayamaram	Anacardiaceae	Tree	Bark, leaf	Gallic acid, $\beta$ -sitosterol	Ulcers, leprosy (folk)
38.	<i>Lawsonia inermis</i> L.	Maruthani	Lythraceae	Shrub	Leaf	Lawsonic acid (2-hydroxy-1,4-naphthoquinone)	Skin diseases, antifungal
39.	<i>Leersia oryzoides</i> (L.) Sw.	Arisi pul	Poaceae	Grass	Leaf	Phenolic compounds	Diuretic (folk use)
40.	<i>Limonia acidissima</i> L.	Vilam pazham	Rutaceae	Tree	Fruit pulp	Tannins, flavonoids	Diarrhea, digestive disorders
41.	<i>Ludwigia octovalvis</i> (Jacq.) P.H.Raven	Neerkirambu	Onagraceae	Herb	Leaf	Lupeol, quercetin	Anti-inflammatory
42.	<i>Malvastrum coromandelianum</i> (L.) Garcke	Chithiramoolam	Malvaceae	Shrub	Leaf, root	$\beta$ -sitosterol, saponins	Antibacterial
43.	<i>Moringa oleifera</i> Lam.	Murungai	Moringaceae	Tree	Leaf, seed	Quercetin, moringin	Antidiabetic, anti-inflammatory
44.	<i>Murraya koenigii</i> (L.) Spreng. (syn. <i>Bergera koenigii</i> )	Kariveppilai	Rutaceae	Small tree	Leaf	Mahanimbine, carbazole alkaloids	Antidiabetic, digestive stimulant
45.	<i>Musa acuminata</i> Colla	Vaazhai	Musaceae	Herb (giant)	Fruit, flower	Dopamine, flavonoids	Ulcer, anemia
46.	<i>Neltuma juliflora</i> (Sw.) Raf. (syn. <i>Prosopis juliflora</i> )	Seemai karuvelam	Fabaceae	Tree	Bark, pod	Juliflorine, alkaloids	Antimicrobial
47.	<i>Nerium oleander</i> L.	Arali	Apocynaceae	Shrub	Leaf	Oleandrin (cardiac glycoside)	Cardiotonic (toxic; controlled use)
48.	<i>Ocimum tenuiflorum</i> L. (syn. <i>Ocimum sanctum</i> )	Thulasi	Lamiaceae	Shrub	Leaf	Eugenol, rosmarinic acid	Cold, asthma
49.	<i>Oryza sativa</i> L.	Nel	Poaceae	Herb	Grain, bran	$\gamma$ -oryzanol, tocopherols	Nutritive, diuretic
50.	<i>Oxystelma esculentum</i> (L.f.) Sm.	Uppilangodi	Apocynaceae	Climber	Leaf, root	Periplogenin, saponins	Cough, muscle pain
51.	<i>Pentstemon capensis</i> (L.f.) Bullock	Paal kodi	Apocynaceae	Climber	Whole plant	$\alpha$ -amyrin, friedelin	Skin diseases

52.	<i>Perilla frutescens</i> (L.) Britton	Perilla	Lamiaceae	Herb	Leaf, seed	Perillaldehyde, rosmarinic acid	Indigestion, nausea
53.	<i>Phyllanthus urinaria</i> L.	Kizhanelli	Phyllanthaceae	Herb	Whole plant	Phyllanthin, hypophyllanthin	Jaundice, liver disorders
54.	<i>Physalis angulata</i> L.	Sodakku thakkali	Solanaceae	Herb	Leaf, fruit	Physalins	Asthma, inflammation
55.	<i>Pongamia pinnata</i> (L.) Pierre (syn. <i>Millettia pinnata</i> )	Pungam	Fabaceae	Tree	Seed, leaf	Karanjin, pongamol	Skin diseases
56.	<i>Psidium guajava</i> L.	Koyya	Myrtaceae	Tree	Leaf, fruit	Quercetin, tannins	Diarrhea, cough
57.	<i>Morinda pubescens</i> Sm.	Indian mulberry	Rubiaceae	Tree	Root, fruit	Anthraquinones	Diabetes, inflammation
58.	<i>Ricinus communis</i> L.	Amanakku	Euphorbiaceae	Shrub	Seed oil	Ricinoleic acid	Laxative
59.	<i>Rottboellia exaltata</i> L.f.	Sunaipul	Poaceae	Grass	Leaf	Phenolics	Fever (folk)
60.	<i>Ruellia tuberosa</i> L.	Kiranthinayagam	Acanthaceae	Herb	Root	$\beta$ -sitosterol	Diuretic, urinary disorders
61.	<i>Saccharum spontaneum</i> L.	Peikkarumbu	Poaceae	Perennial grass	Root, rhizome	Flavonoids, tricin, phenolic acids	Diuretic, urinary disorders
62.	<i>Samanea saman</i> (Jacq.) Merr. (syn. <i>Albizia saman</i> )	Thoongumoonji maram	Fabaceae	Tree	Bark, leaf	Saponins, tannins	Diarrhea, headache
63.	<i>Sesbania grandiflora</i> (L.) Pers.	Agathi	Fabaceae	Small tree	Leaf, flower	Kaempferol, saponins	Eye disorders, diarrhea
64.	<i>Sida cordifolia</i> L.	Nila thuthi	Malvaceae	Shrub	Root, leaf	Ephedrine, vasicinone	Cold, asthma
65.	<i>Solanum melongena</i> L.	Kathirikkai	Solanaceae	Herb	Fruit	Nasunin (anthocyanin), solasodine	Hyperlipidemia, digestive disorders
66.	<i>Solanum nigrum</i> L.	Manathakkali	Solanaceae	Herb	Leaf, fruit	Solanine, solamargine	Liver disorders, ulcers
67.	<i>Spondias pinnata</i> (L.f.) Kurz	Mampulichi	Anacardiaceae	Tree	Bark, fruit	Flavonoids, tannins	Diarrhea, dysentery
68.	<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Seemai nayuruvi	Verbenaceae	Herb	Leaf	Verbascoside, flavonoids	Asthma, digestive disorders
69.	<i>Syzygium cumini</i> (L.) Skeels	Naval maram	Myrtaceae	Tree	Seed, fruit	Jamboline, ellagic acid, quercetin	Antidiabetic, digestive
70.	<i>Tabernaemontana divaricata</i> (L.) R.Br. ex Roem. & Schult.	Nandhiyavattai	Apocynaceae	Shrub	Root, leaf	Voacangine, coronaridine	Analgesic, anti-inflammatory

71.	<i>Talinum paniculatum</i> (Jacq.) Gaertn.	Tharai pasalai	Talinaceae	Herb	Leaf	Saponins, $\beta$ -sitosterol	Diuretic, tonic
72.	<i>Tamarindus indica</i> L.	Puliya maram	Fabaceae	Tree	Fruit pulp	Tartaric acid, flavonoids	Laxative, digestive
73.	<i>Tectona grandis</i> L.f.	Thekku	Lamiaceae	Tree	Bark, wood	Tectoquinone, lapachol	Skin diseases
74.	<i>Terminalia catappa</i> L.	Nattu badam	Combretaceae	Tree	Leaf, fruit	Tannins, flavonoids	Hepatoprotective, antidiabetic
75.	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Poovarasu	Malvaceae	Tree	Leaf, bark	Gossypol, flavonoids	Skin diseases
76.	<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Seenthil kodi	Menispermaceae	Climber	Stem	Tinosporin, berberine	Antipyretic, antidiabetic
77.	<i>Tridax procumbens</i> L.	Vettukaaya poondu	Asteraceae	Herb	Leaf	Quercetin, luteolin	Wound healing
78.	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (syn. <i>Acacia nilotica</i> )	Karuvelam	Fabaceae	Tree	Bark, pod	Catechin, gallic acid	Astringent, diarrhea
79.	<i>Vernonia amygdalina</i> Delile	Bitter leaf	Asteraceae	Shrub	Leaf	Vernolide, sesquiterpene lactones	Malaria, diabetes
80.	<i>Vigna radiata</i> (L.) R.Wilczek	Pachai payaru	Fabaceae	Herb	Seed	Vitexin, isovitexin	Hypertension, nutritive
81.	<i>Ziziphus nummularia</i> (Burm.f.) Wight & Arn.	Narri ilanthalai	Rhamnaceae	Shrub	Fruit, leaf	Cyclopeptide alkaloids	Diarrhea, wound healing

### Dominant Plant Families

Analysis of the recorded flora revealed that several plant families were represented by multiple medicinal species. Fabaceae family has been most dominant with 8 species, followed by Poaceae (8 species), Euphorbiaceae (6 species), Asteraceae (6 species), Malvaceae (6 species), Apocynaceae (5 species), Solanaceae (4 species) and Cucurbitaceae (4 species) (Figure 1). Fabaceae and Asteraceae have often dominated in the literature of ethnobotanical investigations in tropical areas, so far as they have a large distribution and contain bioactive compounds in high concentrations [12]. Species belonging to Fabaceae including *Sesbania grandiflora*, *Pongamia pinnata*, *Vachellia nilotica* are widely recognized for their antimicrobial, anti-inflammatory, and antidiabetic properties. Similarly, Asteraceae species including *Tridax procumbens*, *Eclipta prostrata*, *Cyanthillium cinereum* are usually used in traditional medicine for treating liver disorders, wound healing, and fever. The abundance of Poaceae species in current study can be explained by agricultural landscape of Cauvery delta where grasses and cereal crops are found extensively. Some Poaceae such as *Chrysopogon zizanioides* and *Saccharum spontaneum* possess useful medicinal properties, e.g. diuretic and anti-inflammatory. The findings validate previous ethnobotanical research findings, which recognise selected plant families as effective sources of high contributors of medicinal species due to their phytochemical potential and adaptive complex ecological traits [3].

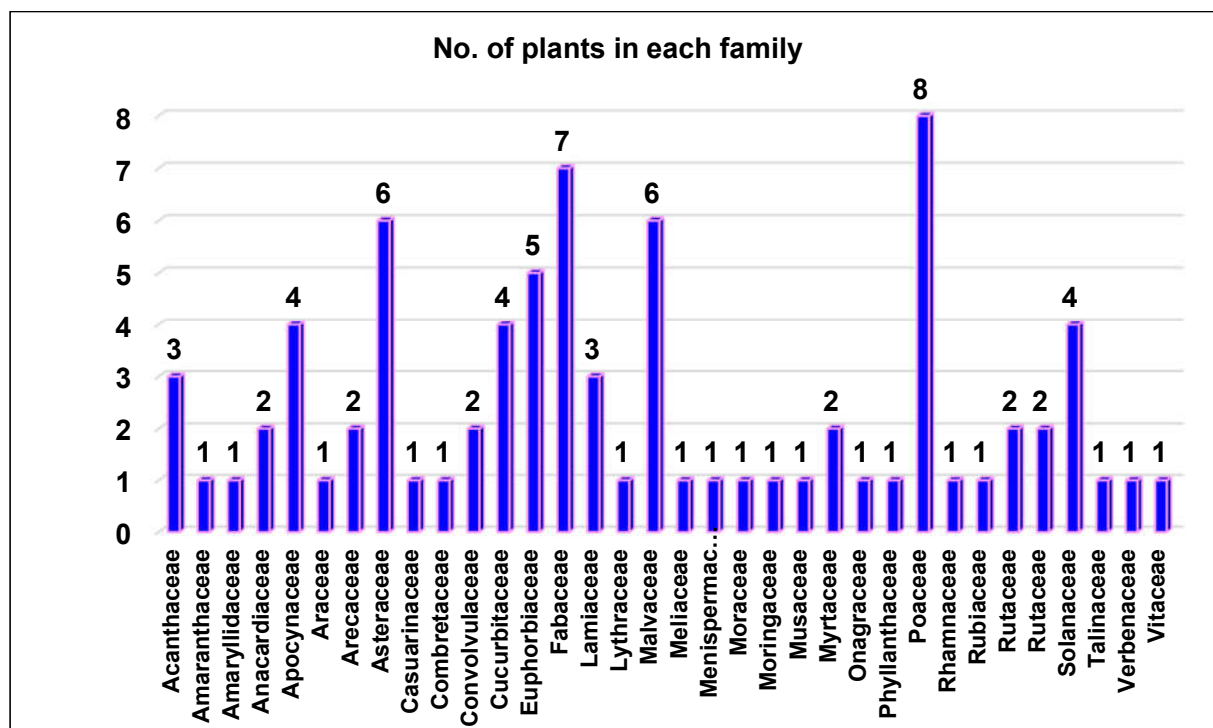


Figure 1. Number of plants present in each family

### Habit Analysis of Medicinal Plants

The medicinal plants noted in research area were different in growth patterns including herbs, shrubs, trees, climbers. Herbs formed highest life form (approximately 37%), following trees (31%), shrubs (20%), climbers (12%) (Figure 2). It is this dominance of herbaceous plants as a form of traditional medicine that permeates most ethnobotanical studies since they have easy access, a rapid growth cycle, and can be found almost all throughout year [13]. Herbaceous plants such as *Phyllanthus urinaria*, *Acalypha indica*, *Tridax procumbens*, *Eclipta prostrata* are widely used in rural healthcare systems due to their quick availability and effectiveness in treatment of common ailments. Tree species also played important role in medicinal flora of region. Important tree species documented comprise *Ficus religiosa*, *Azadirachta indica*, *Syzygium cumini*, *Terminalia catappa*, *Tamarindus indica*. These species serve as good sources of medicines, with any of the following: bark, leaves, fruits, and seeds, which are often employed in the traditional formulations. Some of the clines which were reported to have therapeutic significance were *Tinospora cordifolia*, *Coccinia grandis*, and *Oxystelma esculentum*. The medicinal value of climbers in the traditional medicine system has received several ethnobotanical studies in view of the occurrence of some strong bioactive plant compounds within the stems and roots of the plants [7].

### Plant Parts Used in Traditional Medicine

Ethnobotanical survey disclosed the various parts of the plants used in herbal preparations and they included leaves, roots, bark, fruits, seeds, rhizomes, corms, flowers, and latex. The most common uses of the plant parts were leaves (almost 39 percent of the total), fruit and root, bark, seeds, stem and whole plants (Figure 3). The predominance of leaves in herbal medicine can be explained by the easy access to leaves and the high concentration of secondary metabolites in them, including phenolics, flavonoids, tannins [14]. Leaves may also be harvested without destroying the plant and therefore its use is more sustainable than root harvesting. Some of the most common preparation methods described by the informants were decoctions, infusion, pastes, juices, powders. For example, leaf paste of *Tridax procumbens* is applied externally for wound healing, while decoctions of *Tinospora cordifolia* stem are consumed for fever and diabetes.

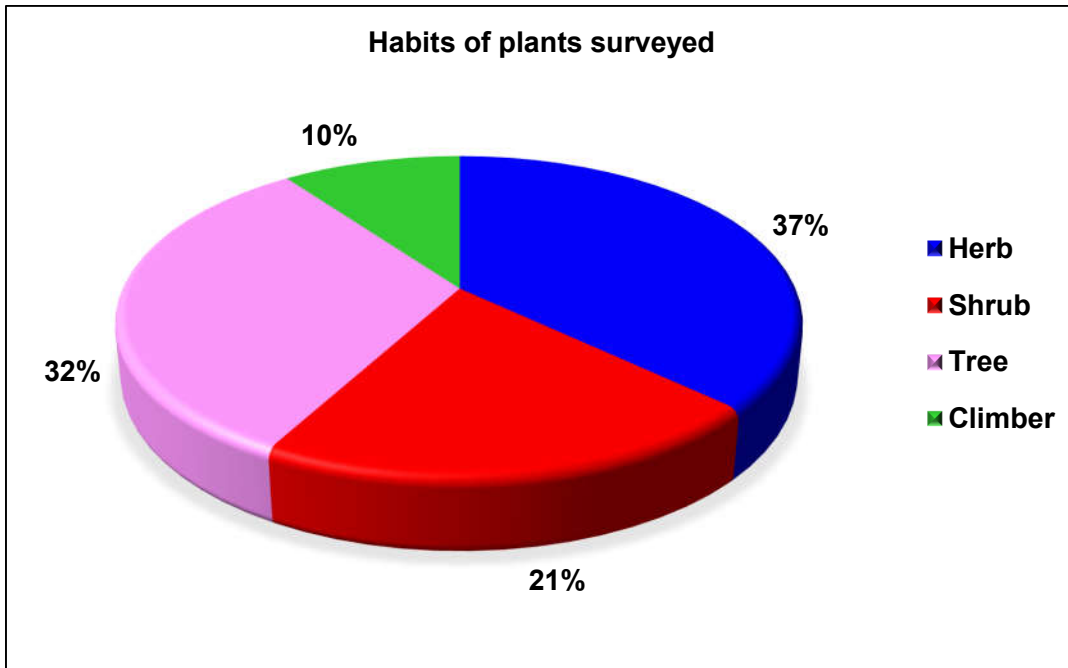


Figure 2. Habits of plants surveyed

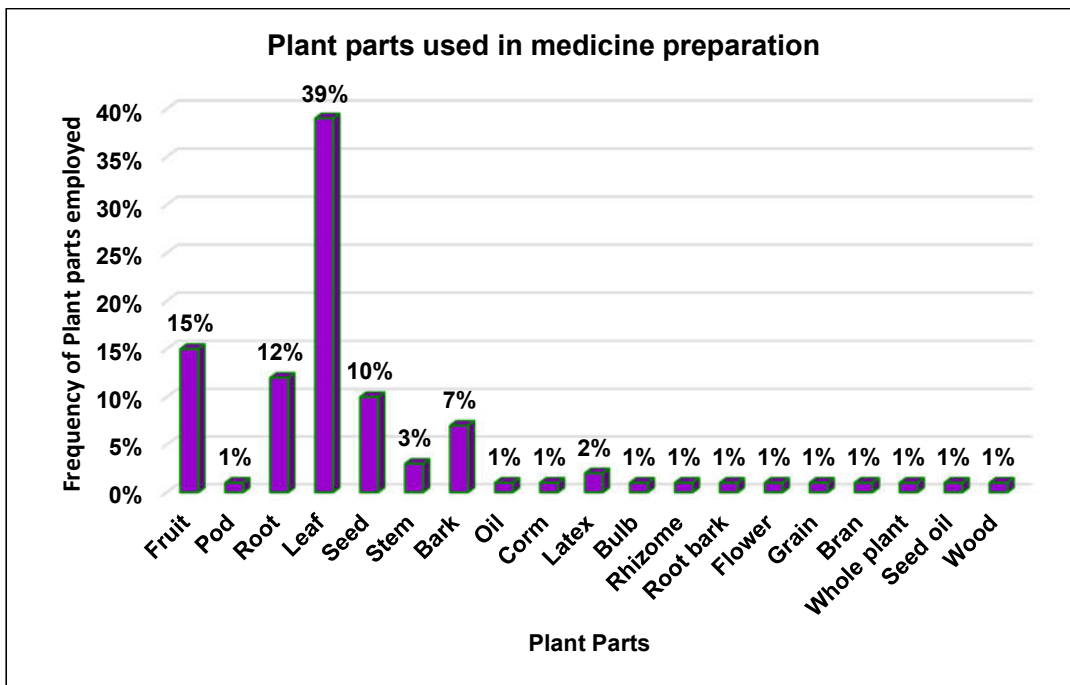


Figure 3. Plant parts employed in medicine preparation

### Phytochemical Constituents of Medicinal Plants

The literature review of the reported plant species revealed that they possessed a vast pool of bioactive phytochemicals that consists of alkaloids, flavonoid, tannins, phenolic acids, terpenoid, glycosides, and saponins. Some of the plants recorded in the current research are reported to contain pharmacologically significant compounds (Table 1). For instance, *Azadirachta indica* comprises azadirachtin and nimbin, that possess antimicrobial and anti-inflammatory properties. *Ocimum tenuiflorum* contains eugenol and rosmarinic acid, known for their antioxidant and antimicrobial activities. Likewise, *Tinospora cordifolia* is also composed of tinosporin and berberine which is particularly widely reported to have immunomodulatory and antidiabetic properties. Among the plants that were reported to have flavonoids were quercetin, kaempferol, and rutin. These substances have high antioxidant, anti-inflammatory, and antimicrobial properties, and this may correlate with the effectiveness of most traditional medicine in herbs [15]. Existence of such phytochemical constituents is one of the scientific evidences that indicate the traditional medicinal applications which have been reported by the local communities. Plant-derived compounds identified by ethnobotanical knowledge have been used to develop many modern drugs [3].

### Medicinal Uses and Disease category

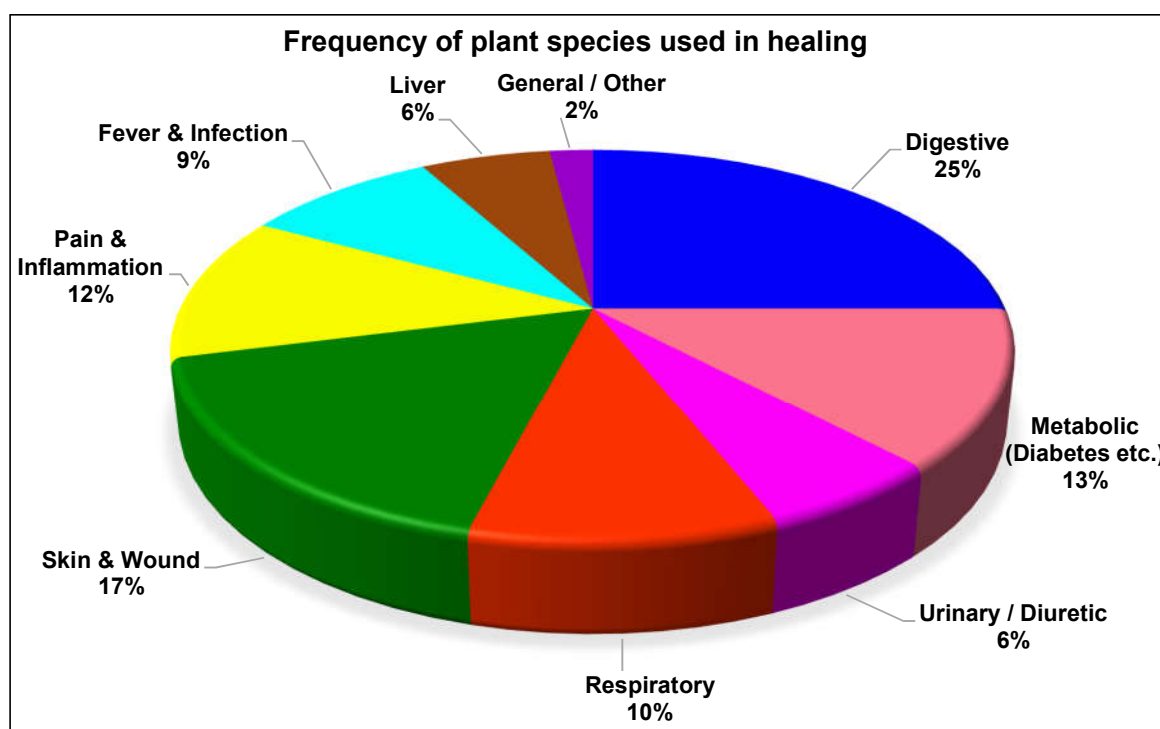


Figure 4. Plant species used in treating various ailments

The medicinal plants that were documented in the current research were applied in the treatment of various health conditions of the physiological systems. Out of these disease categories examined, the highest number of medicinal plant uses were of the digestive disorders, followed by skin and wound ailments, metabolic diseases such as respiratory diseases, diabetes, pain and inflammatory diseases, fever and infectious diseases (Figure 4). Predominance use of plants in the treatment of digestive disorders like dysentery, diarrhoea, indigestion and ulcers can be attributed to gastrointestinal problems are highly prevalent in rural community and that the usage of herbs has long been known in the treatment of these conditions. Displaying similar results, other ethnobotanical surveys in different regions of India have found

digestive disorders to be a large proportion of traditional herbal treatments [7,13]. The topical herbal preparations in the traditional medicine were also crucial as a significant number of plants were utilised in skin diseases and healing of a wound.

Plants including *Tridax procumbens*, *Azadirachta indica*, *Lawsonia inermis* are usually recognized for their antimicrobial and wound-healing properties because of the presence of bioactive phytochemicals comprising tannins, flavonoids, terpenoids [3]. Metabolic disorders, particularly diabetes, were another significant therapeutic category of study area. *Moringa oleifera*, *Syzygium cumini*, *Coccinia grandis* are some of species traditionally used to control glycemic levels and have been scientifically reported to have antidiabetic properties. The identified variety of medicinal uses proves the importance of the primary healthcare system that is represented by plant-based remedies in the rural communities of Cauvery delta region. Such ethnomedicinal knowledge is important information to use in pharmacological and phytochemical exploration because of the provision of documentation on such knowledge.

#### 4. CONCLUSION

The results of the research demonstrate that rural communities in the village of Adambar-II have a rich indigenous medicinal knowledge. This kind of knowledge has been developed over a duration of interaction with the local environment and it is conventionally passed orally across generations. However, rapid modernization, changing lifestyles, and the increasing use of modern medicine threaten the preservation of this traditional knowledge. Ethnobotanical information needs to be documented to ensure conservation of medicinal plant resources, as well as future pharmacological studies. In addition, the medicinal plants in this research are a good source of drug discovery and development since most of the modern pharmaceutical drugs have originated from plant-derived compounds that were discovered in traditional medicine.

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#### Conflict of Interest Statement

NIL

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