

Medicinal Plants Diversity In Sivagangai District Tamilnadu India And Their Ethnomedicinal Banqueting For Drug Delivery

Menaka S^{1*}, Siva N²

^{1,2} PG Research Department of Botany, Raja Doraisingam Government Arts College (Affiliated to Alagappa University), Sivagangai - 630003, Tamilnadu, India

^{1*} Corresponding Author Email: menaka170698@gmail.com

² Email: nsivamku@gmail.com

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ABSTRACT

Our study discovered that the traditional uses of plant species of Sivagangai district people are rich in ethnobotanical knowledge. Documentation of 20 plant species in which Fabaceae occurred in highest proportion of medicinal plants from this listed plants. Altogether 20 plant species belonging to 15 families were documented from the study area. The documented plants and their local name, family, useful part, medicinal uses, food, and traditional use have been summarized in the data. These plant species are used for the treatment of many diseases by local people. The plant species related families represented in Fabaceae (2 species), Amaranthaceae (2 species), Lamiaceae (1 species), Myrtaceae (2 species), Areaceae (2 species), Poaceae (2 species), Moraceae (1 species), Meliaceae (1 species), Rutaceae (1 species), Sapindaceae (1 species), Lecythidaceae (1 species), Musaceae (1 species), Anacardiaceae (1 species), Verbenaceae (1 species) and Acoraceae (1 species). Totally 20 species were reported with ethnomedicinal values. Leaves are the mostly used part to prepare medicine. Generally fresh parts are used. Consideration should be made on appropriate manipulation and consumption of these medicinally important plants. The value of these medicinal plants to manhood is very well proven. It is proved from our study that most of the people living in Sivagangai district trust chiefly on traditional health care system and largely on plant based ethnomedicine. The identified and observed medicinal plants, which were used by the healers and parts of the usage, their local names (vernacular names in Tamil) were recorded.

Keywords: Biodiversity, Ethnomedicine, Health care, Sivagangai, Traditional use.

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1. Introduction:

Biodiversity fetches massive benefits to mankind from direct harvesting of plants and animals for food, medicine, fuel, construction material, and other uses to aesthetic, cultural, recreational and research values. benefits of ecosystem include climate and water regulation. They protect soils, helping to reduce floods and soil erosion, shoreline protection, providing natural controls of agricultural pests and promote creative evolution. People have been using medicinal plants from time immemorial for the treatment of various types of diseases traditionally. Traditional medicinal plants use in India is about 4000 years old. Herbs had been used by all cultures

throughout history. It was an integral part of the development. About 80% of the people in developing countries use traditional medicines for their health care¹. According to the world health organization approximately 80% of populations world wide depend on herbal medicine for their health care needs, especially in rural areas. WHO 2024, in developing countries, traditional medicines provide an inexpensive source of primary health care due to the lack of modern health facilities². Ethnobotanical information is of high cultural importance and of great socio-economic value to researchers, politicians, and the local populations³. Traditional medicinal plants currently play an important role in protecting peoples lives and health in ethnic

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minority regions, especially in remote and less developed areas⁴. India has very rich tradition of herbal or folk medicine employed to cure various dreadful diseases, and there is much documentation available on traditional healing practices by tribal people in India⁵. Plants are a vital source of traditional medicines that are used for the treatment of various ailments⁶. Wild edible plants have been an important part of human diet, unfortunately today, due to the development of modern agriculture, urbanization and globalization the populations are becoming more and more distant from their environment⁷⁻⁸. Studies shows, that in general, women know more than men about medicinal plants⁹. Some authors suggest that this is because men are more exposed at losing ethnobotanical plant knowledge than women¹⁰. Most of the women work activities in home gardens and as primary family health caregivers might explain this finding¹¹. Access to this is limited traditional knowledge is usually passed on orally and often person specific¹². Therefore, the knowledge is often owned by tribal leaders, village heads, elders, heads of small village or traditional healers in the particular community or tribe¹³. Folk healers (Nattu vaidhiyars)in remote places use local flora for treating and preventing ailments and are generally considered as health care resource in rural places inaccessible to modern health care services. Since ancient times, the practitioners of the Indian system of medicine use medicinal plants for preventive and curative applications. These plants gain further importance in the regions where modern facilities are neither available nor easily accessible, particularly in tribal areas. Whereas the wild biodiversity of the plains and the traditional knowledge of their populations on wild edible plants are very rich and threatened¹⁴. Although due to the modernisation, the traditional system of medicine is disappearing but still in rural areas of India as well as whole world, the traditional system of medicine in still use. These ethnic people are still preparing the medicines from the plants are providing many remedies to the people to conserve their indigenous knowledge .most of the people of the rural areas are poor, so they find themselves unable to buy the allopathic system of medicine¹⁵. Before the introduction of allopathic system of medicine ,the tradition of preparing the medicines from the plants was there and used to be many traditional healers known as vaidyas but now a days the use of the traditional system of medicines is disappearing because of the modernisation and

prevalence of allopathic system of medicine. People believe that the traditional system of cure for any diseases take more time while the modern method take short time¹⁶. The documentation and further research on medicinal plants is highly required for the preparation of plant-based drugs¹⁷. Natural products play a pivotal role as a source of drug compounds and currently a number of modern drugs which are derived from traditional herbal medicine are used in modern pharmacotherapy as well as medicinal applications¹⁸⁻¹⁹. The present study's main objective conducted in the Sivagangai district was to document the medicinal plants for human and animal health welfare used by the local population their local names, and their mode of use and their various pharmacologic and therapeutic uses.

2 METHODOLOGY

2.1. Study area:

The Sivagangai District is located between 09° 30'N to 10° 25'N Latitude, and 78° 07'E to 79° 01'E Longitude and has an areal extent of 4143 sq.km. Eastern part of the district covers a geographical area of 4,143 sq.km is surrounded by Melur block towards north Thirupuvanam block towards west Manamadurai block to wards south Kalaiyar kovil block towards east. Temperature 34°C and humidity 59%. Annual rain fall the average annual rain fall over the district varies from about 904.7mm and two main rivers in the area was Pambar, Manimuthar and Sarugani rivers, these area people directly and indirectly depended on agriculture. Wide variety of plants covered in the rural areas of the District(Figure 1).

Questionnaire were prepared to gather information on the local medicinal plants utilization, mode of preparation and treated the ailments. The mother tongue of the local people language is only Tamil and the people are depending on the agriculture and other jobs for our incoming source The present research work was carried out in Sivagangai district during the period June 2021-March 2023, a questionnaire was used and recorded the socio economic conditions to document bio-functional of ethnomedicinal plants in

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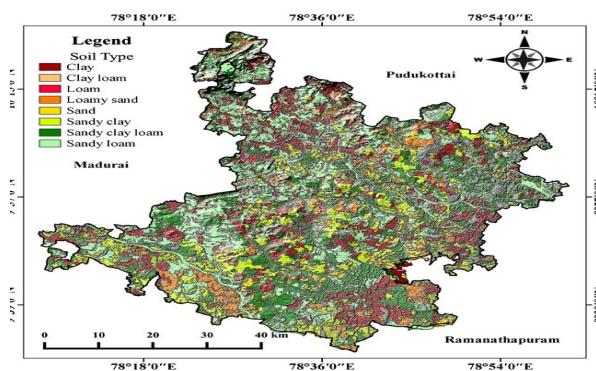


Figure 1. Satellite map of Sivagangai District has an areal extent of 4143 sq.km.

2.2. STUDY DESIGN

The study was conducted for a period of June 2021-March 2023 a questionnaire was used and recorded the socio economic conditions to document bio-functional of ethnomedicinal plants in Sivagangai district in and around the all town and rural blocks. Kaput the investigate method of our survey the identified documented medicinal plants and their diversity and status of Ethno medicinal plants in the Sivagangai, Kalayarkoil, Manamadurai, Thiruppuvanam, Ilyankudi, Devakottai, Kannangudi, Sakottai, Kallal, Thiruppathur, Singampunari and S.Pudur covering of 451 Village Panchayats. The collected medicinal plant species were identified taxonomically using the Flora of Presidency of Madras (Gamble, 1936) and the Flora of Tamil Nadu Carnatic (Matthew, 1983) and names were cross checked with already existing Botanical literatures preserved in Department of Botany Alagappa University, Tamilnadu, India. The plants were arranged alphabetically according to their botanical names with collection number, followed by family, local name, botanical name, useful parts, habit, medicinal properties were documented in tables- 2 and 3.

3.RESULTS AND DISCUSSION

Altogether 20 plant species belonging to 15 families were documented from the study area. The documented plants and their local name, family, useful parts, medicinal uses, have been documented and tabulated (Table 1, 2). summarized the data. These plant species are used for the treatment of many diseases by local people. The identified families represented in Amaranthaceae(2 species), Lamiaceae(1 species), Myrtaceae(2 species), Arecaceae(2species), Poaceae(2species), Moraceae(2species), Meliaceae(1species), Rutaceae(1species), Acoraceae(1species), Lecythydaceae(1species),

Sapindaceae(1species), Lythraceae(1species), Musaceae(1species), Anacardiaceae(1species), Verbenaceae(1species) these species are commercial used in furniture, cosmetics, writing material, perfumes and pharmaceutical industry²⁰⁻²³. From this survey, we have recorded 89 plants belonging to 42 families, most of the plants belong to Fabaceae family in earlier research also supported that even they could find most of the plants belong to Fabaceae family in different regions²⁴.





Table 1-Documentation of Identified Medicinal Plant Species

S.NO	Botanical name	Useful part	Family
1	<i>Aerva lanata</i> (Linn)Juss	Whole plant	Amaranthaceae
2	<i>Azadirachta indica</i> A.Juss	Whole plant	Meliaceae
3	<i>Aegle marmelos</i> (L.)Correa	Whole plant	Rutaceae
4	<i>Acorus calamus</i> L.	Root,stem and leaves	Acoraceae
5	<i>Achyranthes aspera</i> L.	Seeds,roots and shoots	Amaranthaceae
6	<i>Borassus flabellifer</i> L.	Whole plant	Arecaceae
7	<i>Cynodon dactylon</i> (L.)Pers	Whole plant	Poaceae
8	<i>Cocos nucifera</i> (L.)	Whole plant	Arecaceae
9	<i>Couroupita guianensis</i> Aubl	Fruit	Lecythydaceae
10	<i>Cardiospermum halicacabum</i>	Whole plant	Sapindaceae
11	<i>Clitoria tematea</i> L.	Seeds,bark,leaves and fruits	Moraceae
12	<i>Ficus religiosa</i> L.	Seed,root and leaves	Fabaceae
13	<i>Albizia lebbbeck</i> (L.)Benth	Seeds and leaves	Fabaceae
14	<i>Musa acuminata</i> colla	Whole plant	Musaceae
15	<i>Mangifera indica</i> L.	Bark, leaves and fruits	Anacardiaceae
16	<i>Ocimum tenuiflorum</i> L.	Leaves	Lamiaceae
17	<i>Psidium guajava</i> L.	Leaves and fruits	Myrtaceae
18	<i>Syzygium cumini</i> (L.)Skeels	Whole plant	Myrtaceae
19	<i>Tectona grandis</i> L.f.	Whole plant	Verbenaceae
20	<i>Ficus racemosa</i> L.	Whole plant	Poaceae

Fabaceae is of great ethnobotanical importance in indigenous and urban communities throughout the world. Their medicinal value lies partly in their effectiveness in the treatment of a wide variety of human ailments. The variety of chemically active constituents, such as tannins, flavonoids, alkaloids, and terpenoids often found in members of this family, are substances with a high level of biological activity, and the fact that they are used extensively would suggest a pattern of global ethnobotanical knowledge²⁴⁻²⁵. Leaves and roots are generally forming the most frequently used plant parts in traditional medicine. Among the plant parts, the leaves are most frequently used for the treatment of diseases²⁶. The roots, fruits, bark, gum and latex, stem, seeds, and flowers are also used as per their availability and curing ability. Many indigenous communities throughout the world also utilized mostly leaves for the preparation of herbal medicine²⁷⁻³⁰.

Table 2- Medicinal Properties of Observed Plant Species

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S.NO	Image of the Plants	Tamil name	Medicinal Uses
1	 <i>Aerva lanata(Linn.)Juss</i>	Kannupillai poo	Low blood sugar, asthma, diarrhoea, kidney stones, intestinal worms and anti-cancer
2	 <i>Azadirachta indica A.Juss</i>	Vempu	Treats acne, nourishes skin, treats fungal infections, detoxification, increasing immunity, insect and mosquito repellent, gastrointestinal diseases, treats wounds, reduces dandruff and reduces joint pain.
3	 <i>Aegle marmelos(L.)Correa</i>	Vilvam	As per Siddha and Ayurveda, Vilvam leaves are often prescribed for gastrointestinal disorders. Vilvam is rich in nutrients, minerals, phytochemicals and antioxidants which add to its medicinal value. Vilvam leaf extract is helpful in increasing immunity and is effective against seasonal diseases like cough, cold and fever.
4	 <i>Acorus calamus L.</i>	Vasambu	Epilepsy, mental ailments, chronic diarrhoea, dysentery, fever, abdominal tumours, kidney and liver troubles and rheumatism.

4. CONCLUSION

The study conducted in Sivagangai district revealed a rich multiplicity of medicinal plants traditionally used to treat a extensive range of human ailments. Ethnobotanical studies across Tamil Nadu have correspondingly shown that economically disadvantaged and rural communities often prefer traditional medicine due to its affordability and deep cultural roots. Interviews from various villages indicate that knowledge of medicinal plants is primarily held by traditional healers, herbalists, and elderly individuals in rural areas. Therefore, systematic documentation and specimen identification are crucial for its preservation. The traditional uses of Sivagangai district, Tamilnadu people are rich in ethnobotanical knowledge. Documentation of 20 plant species which Fabaceae was occurred in highest proportion of medicinal plants from this listed plants. Medicinal plants used in local health care traditions are regularly becoming extinct due to overutilization, population explosion, and for anthropogenic reasons therefore it is essential to conserve such knowledge secreted in the different parts of the country and people should be promoted and protect the medicinal plants for future.

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