

# **Ethnomedical Value of Plants in Nagapattinam District of Tamil Nadu, India**

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## **ABSTRACT**

The present survey was undertaken to explore the traditional knowledge of plant species found in four villages (Athamangalam, Vadukkuveli, Thalainayar and Perumangalam) in Sirkali taluk of Nagapattinam district, Tamilnadu state. The ethnomedicinal information was collected through oral interviews to village elders and vaidyas (those who cure disease by traditional methods) of the rural areas of this district. The knowledge available to the rural population of the area is transmitted only through oral language from generation to generation over time and therefore it needs to be recorded in order to be preserved. Medicinal plants are listed by botanical name, family name, local name, plant parts used and mode of preparation and the names of the diseases cured. About 50 plant species belonging to 27 families were described as effective herbal drugs for various ailments. The documented ethnobotanical uses of plants mostly related to the treatment in curing stomach pain, breast pain, headache, bleeding, yellow fever, muscle pain and blood purifier.

**Keyword:** Ethnomedicine; traditional medicine; Athamangalam; Nagapattinam and Tamilnadu

## **1. INTRODUCTION**

The term ethnobotany was first coined by an American botanist, John Harshburger (1896), to study the plants used by the primitive and aboriginal people. Since then it has been defined as the traditional knowledge on indigenous communities, about surrounding plant diversity and as the study of how the people of particular culture and region make use of indigenous plants. Ethnobotany has its roots in Botany. Botany in turn originates in part from an interest in finding plants to help fight illness. In fact, medicine and botany have close ties. Many of today's drugs have been derived from plant resources.

Ethnobotany deals with the people of a particular culture and regions makes the use of indigenous plant while the ethnobotanist explores how plants are used for food, shelter, medicine, clothing, hunting and religious ceremonies. It is the relationship between a given society and its environment and in particular the plant world (Aumeeruddy, 1996).

The traditional knowledge of medicinal plants in India is enormous since many centuries based on different practical measures. It has been reported that traditional healers used more than 3000 plant species. Medicinal plants are considered to be the basic health care of rural households from the ancient days. A large number of medicinal plants are uninvestigated. The medicinal products from plants also have great interest in the process of

drug discovery. Their vast diversity of plants in nature permits the identifications of molecules for the development of new therapeutic agents as well as biochemical and molecular mechanism of action involved in most physiological and pathological process. The medicinal properties of a plant depend upon the presence of certain chemical constituents. These chemical constituents seem to be responsible for curing disease. This chemical constituent have to be isolated, purified and identified as definite chemical compounds (Kumar and Chaturvedi, 2010).

The urbanization and industrialization lead to reduction in nature heritage, including the ethnic medicines of the Indian sub-continent. Only few of the ethnic groups in our country still retain their knowledge on the uses of medicinal plants, which are growing naturally in forests. From the literature survey, it is understood that the information available regarding the study of traditional medicines in Nagapattinam district of Tamilnadu is meager.

The rural communities, ethnic groups and folklore throughout the world are utilizing plant parts like root, stem, leaf, bark, flowers and fruits in various ways for the treatment of various ailments. An attempt has been made to record ethnomedicinally important plants and their useful parts. These plants have been successfully used in the different systems of medicines like Siddha, Ayurveda, Unani, Homeopathic and other. One of the major problems with this herbal formulation is that the active ingredients are not well defined. It is important to know the active component and their molecular interaction, which will help to analyze therapeutic efficacy of the product and also to standardize the product (Jayaprasad *et al.*, 2011).

## 2. STUDY AREA

The district of Nagapattinam lies on the shores of the Bay of Bengal between Northern Latitude 10° 46' degrees and 79° 49' degrees Eastern Longitude an area of 2716 km<sup>2</sup>, which has a lot of herbs, shrubs and trees of important medicinal values.

## 3. MATHODOLOGY

The present study was carried out during 2012 to 2013 to collect data on traditional uses of medicinal plants used in the preparation of crude herbal drugs by the rural area people living in Sirkali taluk of Nagapattinam district. During this surveys personal interview were conducted with the village dwellers, the herbal medicine practioners and other traditional healers. Each of the plant material was assigned field book number and documented as to family, scientific name, vernacular name (Tamil), part used and medicinal uses, Plant parts that were identified as having use in ethnobotany were collected and Recorded.

## 4. RESULTS AND DISCUSSION

In the present investigation, we recorded around 50 species belonging 27 families used as herbal medicine for the treatment of various disease like Asthma, rheumatism, diarrhea, filariasis, diabetes, and yellow fever, and other. These have been successfully used in the

different systems of medicines like Siddha, Ayurveda, Unani, Homeopathic and others. They utilize different parts of plants like roots, stem, leaf, bark, flower and fruits in various ways for the treatment of various ailments since ancient time. Some parts of the plants were taken internally in the form of powders, decoction and infusion. Some are made into paste and applied externally. The specific use of these herbal medicines depends upon the nature of diseases to be treated. The medicinal plants collected from the study area are listed below as the botanical name of the species. Family, vernacular name, plant organ used and mode of uses.

S. No	Botanical name	Family	Local name	Habits	Part used	Treatment
1	<i>Abutilon indicum</i> L.	Malvaceae	Thuthi	Herb	Root	Root extract is taken orally twice a day for two weeks to cure piles.
2	<i>Acalipha indica</i> Linn.	Euphorbiaceae	Kuppaimeani	Herb	Leaves	Leaf paste is applied twice a day for 1 week to cure bronchitis.
3	<i>Achyranthes aspera</i> Linn.	Amaranthaceae	Nauruvi	Herb	Leaves	Leaf paste with onion paste is applied external on the bitten site of dog and to cure skin diseases.
4	<i>Acorus calamus</i> (Linn).	Acoraceae	Vasambu	Herb	Rhizome	As sedative, cancer, pneumonia.
5	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Adhatoda	Shrub	Leaves and seed	Leaves are used as aromatic, antiarthritis, antispasmodic, bronchiodilator, diuretic and sedative. Poulitice of seed application is best to cure inflammation, new wounds and rheumatic pains.
6	<i>Aegle marmelos</i> Corv.	Rutaceae	Vilvam	Tree	Roots, leaves, unripe fruits and ripe fruits	Various parts of plant are used to relieve thirst, stomach pain, night fever, breast pain. Fruit decoction used for treatment of intestinal diseases.
7	<i>Aerva lanata</i> (L.) Juss.	Amaranthaceae	Sirukanpeelai	Herb	Roots and flowers	Decoction of root and flower are used to treat kidney stone.
8	<i>Alternanthera sessilis</i> DC.	Amaranthaceae	Ponnaanganni	Herb	Leaves	Leaf is cooked and eaten with normal diet for 20-30 days to cure night blindness.
9	<i>Andrographis paniculate</i> (Burm.F.)	Acanthaceae	Nilavembu	Herb	Leaves	The leaves are used as chicken guinea, Swine flu and Typhoid.
10	<i>Annona squamosa</i> L.	Annonaceae	Seetha	Tree	Leaves, bark	Whole plant is used to inhibit HIV replication.

11	<i>Azadiracta indica</i> A. JUSS.	Meliaceae	Vembu	Tree	Flowers	Flowers boiled in gingili oil are applied on head against dandruff once days in the morning after taking bathing.
12	<i>Calotropis gigantean</i> R. Cr.	Asclepiadaceae	Erik	Shrub	Roots and flowers	Juice from the plant is used to cure piles. Root bark is made into a paste and applied to treat elephantiasis. Flower decoctions are good digestive and also cure stomach ache.
13	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Modukkathan	Climber	Leaves and whole plant	Leaf juices are taken internally to treat diabetes. They inhaling leaf juice relieves head ache.
14	<i>Cassia auriculata</i> Linn.	Caesalpiniaceae	Aavaram	Shrub	Roots	30 mL of the boiled water extract of the roots is taken twice a day for a period of one month to treat diabetes.
15	<i>Cathranthus roseas</i> L.	Apocynaceae	Nithyakalyani	Shrub	Leaves and Roots	Leaf and root juices are used daily two times to cure diabetes.
16	<i>Centella asiatica</i> (L.) Urban.	Umbelliferae	Vallarai	Herb	Leaves	Extract from the leaves and whole plant are taken internally for improving memory capacity and also used externally to cure head ache.
17	<i>Clitoria ternatea</i> L.	Fabaceae	Sangupoo	Climber	Leaves	Fresh leaf paste with the paste of pepper ( <i>Piper nigrum</i> ) is applied on swelling of legs.
18	<i>Cleome viscosa</i> L.	Capparidaceae	Naaikkadukhu	Herb	Leaves	Leaves paste is applied for inflammations.
19	<i>Coccinia indica</i> L.	Cucurbitaceae	Kovai	Climber	Leaves	Leaves juice is taken orally twice a day for 2 days to cure fever.
20	<i>Curcuma aromatic</i> Salisb.	Zingiberaceae	Kasthoorimanjal	Herb	Rhizome	Dried rhizome is used against various skin diseases.
21	<i>Cynodon dactylon</i> (Linn) Pers.	Poaceae	Arugampullu	Perennial grass	Leaves	Pounded leaves boiled coconut oil is applied once a day till the cure various type of skin diseases.
22	<i>Cyperus rotundus</i> Linn.	Cyperaceae	Sarakontrai	Shrub	Root	Decoction from the root is useful to treat intestinal problems, stomach pain. Root pastes are applied to cure wounds sores etc.

23	<i>Datura metal</i> Linn.	Solanaceae	Ummattai	Shrub	Leaves	Dried leaf powder is smoked as cigarette twice a day for 2 – 3 weeks to get relief from asthma.
24	<i>Eclipta alba</i> Hossak.	Asteraceae	Karisalaganni	Herb	Leaves	Leaf juice boiled with coconut oil is used for luxuriant black hair. Extract from the leaves cure skin diseases by external application.
25	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Nellikka	Tree	Root, bark, leaves and fruits	Root and bark is astringent, decoctions from leaves are useful for ulcers in mouth. Fruits are used for laxative and purgative and also for abundant growth of hair.
26	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Amman Pacharisi	Herb	Latex	Juice from the plant is given to treat dysentery and colic, latex is applied to cure warts.
27	<i>Ficus benghalensis</i> Linn.	Moraceae	Alamaram	Tree	Stem, bark and root	The decoction obtained is taken once a day for a period of six weeks to treat diabetes.
28	<i>Gymnema sylvestre</i> (Retz.) Schult.	Asclepiadaceae	Sirukurunjha	Herb	Leaves and roots	In diabetes, digestive, liver tonic and cardio tonic.
29	<i>Hemidesmus indicus</i> R. Br.	Asclepiadaceae	Nannari	Herb	Root	Roots are made into a paste and applied externally to cure various skin diseases. Decoction from the root as a good blood purifier and also cure stomach ache.
30	<i>Hibiscus rosa sinensis</i> Linn.	Malvaceae	Sembaruthi	Shrub	Flower and Leaves	Decoction of petals given for bronchial catarrh and also to strengthen the heart. Leaf juice is given for blackening the hair.
31	<i>Hyptis suaveolens</i> (L.) Poit	Lamiaceae	Mint weed	Shrub	Whole plant	Wound healing, cough and chest pains, Ringworm and cosmetics.
32	<i>Ipomoea aquatic</i> Forsskal.	Convolvulaceae	Veelaikkeerai	Terrestrial Climber	Flower	Flower juice is applied once daily in early morning around the eye to cure black ring around the eye.
33	<i>Landana camera</i> Linn.	Verbanaceae	Unichedi	Shrub	Leaves	Leaf paste is applied topically to treat wounds healings.

34	<i>Leucas aspera</i> Spreng	Lamiaceae	Thumbai	Herb	Leaves, flowers and roots	Juice from the leaves is applied in the affected part to cure psoriasis; flower dot decoction is used to treat cold. The whole plant decoction is used to treat worm's induced effects.
35	<i>Madhuca longifolia</i> (Koenig)	Sapotaceae	Eluppai	Tree	Seeds	Pounded seeds mixed with leaf extract of <i>Ocimum tenuiflorum</i> are applied on the affected parts twice a day to cure skin diseases.
36	<i>Mimosa pudica</i> L.	Mimosaceae	Thotta sinungi	Herb	Roots	Decoction of root is taken orally once a day for one week to get relief from urinary complaints.
37	<i>Momordica charantia</i> Linn.	Cucurbitaceae	Pagarkai	Climber	Fruits, seeds and leaves	30 ml of the juice prepared from few fresh fruits and few fresh leaves with pieces of the stem bark of <i>Syzygium cumini</i> is taken once a day to treat diabetes.
38	<i>Murraya koenigii</i> L.	Rutaceae	Karuveppilai	Shrub	Leaves	Juice taken tender leaves is taken orally to arrest vomiting.
39	<i>Ocimum basilicum</i> L.	Lamiaceae	Thirunitu pacchilai	Herb	Leaves	5 – 10 leaves are eaten as raw twice day for cough and cold.
40	<i>Ocimum canum</i> Sims.	Lamiaceae	Nai thulasi	Herb	Leaves	Malaria, fever, digestive and cardio tonic.
41	<i>Ocimum sanctum</i> L.	Lamiaceae	Thulasi	Herb	Leaves	Leaf juice is taken orally twice a day for 2 days to cure cough, cold and fever.
42	<i>Pedaliu murex</i> L.	Pedaliaceae	Yaana nerungil	Herb	Fruits	Fruit decoction is given to drink with 50 – 100 ml of hot water twice a day for 2 – 3 days to cure diarrhea.
43	<i>Phyllanthus amarus</i> Schum and Thonn.	Euphorbiaceae	Kizhanelli	Herb	Roots, stems, leaves and flowers	Whole plant decoction use to treat diabetes, and also used to cure cough and chest pain. The plant extract are used externally to treat wounds.
44	<i>Ricinus communis</i> Linn.	Euphorbiaceae	Amanakku	Shrub	Leaves	One teaspoon of the blend made by grinding some shade dried leaves and few shade dried leaves of <i>Phyllanthus amarus</i> (Kizhanelli) is taken with ghee thrice a day for one week to treat

						jaundice.
45	<i>Solanum nigrum</i> Linn.	Solanaceae	Manathakkali	Shrub	Leaves	Leaf juice applied externally to cure itching
46	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Kaavaalai	Herb	Roots, leaves, seeds and whole plant	Decoction from the plant as a good blood purifier. Dried herb made as a paste and applied for the treatment of boils and pimples. Juice of leaves is beneficial in diabetes.
47	<i>Vetiveria zizanoides</i> Nast	Poaceae	Vetiver	Herb	Root	As febrifuge, diaphoretic and stomach ache.
48	<i>Vitex negundo</i> L.	Verbenaceae	Karinotchi	Shrub	Root, stems, leaves, seeds and whole plant	The whole plant decoction is used to treat cough, fever and asthma. Roots tincture is used in rheumatism. Leaves are effective in gonorrheal epididymitis and as vermifuge.
49	<i>Wrightia tinctoria</i> R. Br.	Apocynaceae	Veppalai	Tree	Leaves	Pounded leaves mixed with coconut oil are applied twice a day. To cure psoriasis.
50	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Inji	Herb	Rhizomes	Decoction of ginger can treat respiratory tract problems, cold and cough. Syrup of ginger is used to treat head ache, impotency and menstrual disorders.

## 5. CONCLUSION

Herbal medicine is the best and cost effective medicine in curing of many diseases. It cures many diseases which are not cured by other system of medicines like, western medicines. The elders of this area are using number of medicines of plant origin. The information may be useful in the field of ethnobotany. Some of these plants were traditionally used and very few active constituently chemical compounds have been isolates and identified. This article may give rise a new pathway for researcher who works in the field of ethno medicine to isolate the active compound for particular diseases.

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