

**ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED BY MALAYALI  
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**ABSTRACT**

Plants have been used since ancient times for the treatment of various ailments. An ethnobotanical survey was conducted to collect information about the medicinal plants used by Malayali tribes in Vathal hills of Eastern Ghats, Dharmapuri district Tamilnadu, India. They still depend on medicinal plants for their primary health care needs and most commonly used to cure skin diseases, poison bites, stomachache and nervous disorders. To document their indigenous knowledge on the utilization of medicinal plants particularly most common ethnomedicinal plants. Traditional medicinal knowledge is important not only for its potential contribution to drug development and market values, but also for the people's healthcare. A total of 110 species of plants distributed in 90 genera belonging to 49 families were identified as commonly used ethnomedicinal plants. As a result, the present study revealed that the information documented regarding the therapeutic uses will provide basic data for further studies mainly focused on conservation of important medicinal plants.

**KEYWORDS:** Herbal medicine, Ethnobotany, Malayali tribes, Vathal hill.**INTRODUCTION**

India is having rich vegetation with a wide variety of plants, because of the extreme variations in geographical and climatic conditions prevailing in the country. Ethnobotany can be describing as the relationship and interaction between man his surrounding local environment.<sup>[1]</sup> The traditional systems of medicine together with folklore systems continue to serve a large portion of the population, particularly in rural areas, in spite of the advent of the modern medicines. India has more than 3000 years of medicinal heritage based on medicinal plants. Medicinal plants are widely used by all sections of the population either directly as folk remedies or indirectly in the preparation of modern pharmaceuticals. Out of nearly 17,000 higher plants recorded in India, 7500 are reported to be in medicinal use by the rural and tribal communities.<sup>[2, 3]</sup>

According to WHO report, over 80% of the world population relies on traditional medicine for their primary health care needs.<sup>[4]</sup> Though the traditional medical practices are empirical in nature, over 200 million people in India with limited access to the organized health centers, depend on varying degrees in the traditional system of medicine to cater their health care needs.<sup>[5]</sup> Tribal communities dwelling the remote areas depend on the forest resources to meet their

livelihood and health care needs. The medicinal plants in the wild contribute to cater 80% of the raw materials used in the preparation of drugs. Herbal medicines have been used since antiquity in treating diseases including infectious diseases. Therefore, documentation of traditional knowledge and ethnobotanical information play an important role in scientific research.<sup>[6]</sup>

Ethnic people are highly knowledgeable about the plants and their medicinal values. This knowledge is passed through oral communication from generation to generation. Over the last century, ethnobotany has evolved into a specific discipline that looks at the people-plant relationship in a multidisciplinary manner, such as ecology, economic botany, pharmacology, public health and other disciplines as needed.<sup>[7]</sup> Tribal population provides considerable information about the use of many plants or plant parts as medicine. Today according to the World Health Organization as many as 80% of the world's people depend on traditional medicine for their primary healthcare needs.<sup>[8]</sup> There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases. Traditional medical practices are an important part of the primary healthcare system in the developing world.<sup>[9]</sup> Herbal medicines are comparatively safer than synthetic drugs. Plant-based



Tamil Nadu Carnatic <sup>[22]</sup> were used for identification and authentication of the plants.

## RESULTS AND DISCUSSION

In Table 1, data obtained from the field survey are presented. In this study 110 plant species belonging to 49 families have been recorded. Many plant species belonging to families of Acanthaceae, Solanaceae, Euphorbiaceae, Caesalpinaceae, Apocynaceae and Asclepiadaceae are frequently used. The informations collected from this study are in agreement with the previous reports.<sup>[23]</sup> For common ailments such as wounds and skin diseases more number of medication were used. On the other hand, few were used to alleviate

problems such as cold, cough and asthma. Ayyanar and Ignacimuthu<sup>[15]</sup> reported that *Andrographis* sp. is used by tribal people to treat poisonous bites, similar observations have been made in the present study. Healers in the area diagnose diseases based on symptoms but sometime they may also associate it to spirit. Therefore, preparation of medicines and treatment of diseases are sometimes accompanied by rituals. Tribal practitioner(s) use specific plant parts and dosages in treatment of specific ailments. Plant products are consumed raw or taken as decoction (juice)/ infusion (oral treatment) and paste (external application). Fresh leaves, root and stem were more frequently used when compared to other parts of the plant.

**Table 1. Ethanomedicinal plants, binomial nomenclature, family, parts used by malaiyali tribes in vathal hill.**

Binomial nomenclature	Family	Parts used
<i>Acacia arabica</i> (Lam.) Willd.	Mimosaceae	Seeds used to treat diabetics, alleviate headache.
<i>Acacia caesia</i> (L.) Willd.	Mimosaceae	Bark paste applied topically to heal wounds.
<i>Acacia leucophloea</i> (Roxb.) Willd.	Mimosaceae	Bark paste applied topically to heal wounds.
<i>Acalypha paniculata</i> Miq.	Euphorbiaceae	Leaf Juice taken to prevent lose motion.
<i>Adhatoda zeylanica</i> Medicus.	Acanthaceae	Leaf Asthma, Cold, Leaf paste taken orally to treat fever. Root, bark, leaves, and flowers used for cough.
<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Leaf powder mixed with cow's milk is taken to treat diabetes.
<i>Agave americana</i> L.	Agavaceae	Leaf gel portion in heated and applied over infected wounds to heal soon.
<i>Ageratum conyzoides</i> L.	Asteraceae	Leaf paste is applied to cure cut wounds and injuries.
<i>Alangium salvifolium</i> (L.f.) Wang.	Alangiaceae	Dried leaf powder is mixed with hot water and taken orally to cure bowel complaints. The leaf powder is given to cattle's to cure loss of appetite.
<i>Alangium lamarbi</i> Thwaites.	Alangiaceae	Bark paste is taken orally to remove snake bite poison.
<i>Allium cepa</i> Linn.	Alliaceae	Bulb and Leaf juice with milk is taken to treat diabetes.
<i>Allium sativum</i> Linn.	Alliaceae	Bulb, Leaf antihelminthic, antiasthmatic, anticholesterolemic, antiseptic, antispasmodic, diaphoretic, diuretic, stomachic and antidiabetic
<i>Aloe vera</i> Linn.	Liliaceae	Leaf Wound healing and gel is applied over the infected part to promote healing.
<i>Amaranthus viridis</i> L.	Amaranthaceae	Leaf paste is applied over the infected area to cure erysipelas.
<i>Andrographis lineata</i> Wall. ex Nees.	Acanthaceae	Leaf powder mixed with cow's milk is taken orally to treat diabetics. Leaf paste applied on snake bitten site.
<i>Anisomeles malabarica</i> (L) R.Br.Ex.Sims.	Lamiaceae	Leaf paste applied externally on wounds.
<i>Annonasquamosa</i> L.	Annonaceae	The smoke produced from the dried leaves during the heat is used as lice repellent.
<i>Argemane mexicana</i> L.	Papavaraceae	Latex applied on infected parts to cure ringworm infection.
<i>Artocarpus hirsutus</i> Lam.	Moraceae	Latex Asthma, Fruits used as appetizer, seed with honey used to treat asthma.
<i>Asparagus racemosus</i> Willd.	Liliaceae	Leaf paste applied to heal cracks on foot. Root - antispasmodic, aphrodisiac, demulcent, diuretic, treat infertility, loss of libido, menopausal problems.
<i>Azadirachta indica</i> A. Juss.	Meliaceae	Leaves - vermifuge, antiseptic, anti-diabetics, astringent, antiperiodic.
<i>Bauhinia racemosa</i> Lam.	Caesalpinaceae	Powdered stem bark is mixed with the leaf powder of <i>Cassia fistula</i> and ground into a paste and given to cattle to solve muscle pain and swellings.
<i>Buchanania axillaris</i> (Desr.) Raman.	Anacardiaceae	Fresh stem bark is ground into paste with coconut oil and applied over the affected places to cure sprains.
<i>Betel piper</i> L.	Piperaceae	Leaf petiole mixed with calcium is applied on face to cure pimples.
<i>Bombax ceiba</i>	Bombacaceae	Leaf / Seed powder mixed with goat's milk is taken orally to treat diabetics.
<i>Borassus flabellifer</i> L.	Arecaceae	Petiole juice cures all type of eye problem.
<i>Brassica juncea</i> (Linn.) Czern. & Coss.	Braceaceae	Seed powder mixed with goat's milk is taken orally to treat diabetics.
<i>Caralluma umbellate</i> (Roxb.) Haw.	Asclepiadaceae	Whole plant parts are eaten raw to cure gas troubles. The paste of whole plant parts are used to cure heel cracks.

<i>Calotropis gigantea</i> (Linn.) R.Br. ex Ait.	Asclepiadaceae	Latex is applied over insect bite to reduce the effect of insect poison.
<i>Cardiospermum canescens</i> Wall.	Sapindaceae	Leaf juice taken orally for a period of 2 days to arrest dysentery.
<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Young leaves are tied with cloths over the throats of cattle's to recover from throat infection.
<i>Cassia ariculata</i> L.	Cesalpiniaceae	Flower powder decoction (tea) reduces body tiredness and treat diabetics.
<i>Cassia fistula</i> Linn.	Caesalpiniaceae	Leaf Laxative, Fruit pulp is used as laxative. Bark of tree is rich source of tannin.
<i>Cassia senna</i> Linn.	Cesalpiniaceae	Leaf extracts used as laxative and used to promote joining of bones.
<i>Catharanthus roseus</i> L. (G) Don.	Apocyanaceae	Whole plant decoction taken to treat diabetics, leaf juice used to treat cancer,
<i>Cayratia pedata</i> (Lam.) Juss.ex.Gagnep.	Sapindaceae	Young leaves are ground into paste and applied topically to treat snake bite.
<i>Centella asiatica</i> (L.) Urban.	Umbelliferae	Leaf juice taken to treat jaundice.
<i>Cipadessa baccifera</i> Miq.	Meliaceae	Leaf paste taken orally to treat Diarrhea.
<i>Citrus limon</i> (Linn.) Burm. f.	Rutaceae	Fruit is used to cure nail infection, juice induces freshness to body.
<i>Citrus medica</i> L.	Rutaceae	Fruit Nail infection, Refreshener
<i>Clausena dentata</i> (Willd.) Roem.	Rutaceae	Leaf paste applied in area to heal cut wounds.
<i>Colocasia esculenta</i> (L.) Schott.	Araceae	Boiled root tubers consumed to cure piles.
<i>Costus speciosus</i> (J. Koen.) Smith.	Zingiberaceae	Leaves used to treat diabetes.
<i>Cryptolepis buchananii</i> Roem and Schul.	Asclepiadaceae	Stem latex applied on skin to treat wounds
<i>Croton bonplandianum</i> Baillon.	Euphorbiaceae	Leaves are ground into paste and applied over the affected places to cure wounds.
<i>Cuminum cyminum</i> Linn.	Apiaceae	Leaves consumed to alleviate body ache, feel fresh, and treat diabetics.
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Dry leaf powder made to juice to cure menstrual problem in women.
<i>Dioscorea oppositifolia</i> L.	Dioscoreaceae	Paste of rhizome taken to treat stomachache.
<i>Diospyros chloroxylon</i> (Roxb.)	Ebenaceae	Leaf paste is taken with hot water to cure snake bite and stomachache.
<i>Elatteria cardamomum</i> (L) Maton.	Zingiberaceae	Fruits taken to treat stomachache.
<i>Erythrina indica</i> Lam.	Fabaceae	Leaves relive body pain; headache, fever, cold, fruits treat diabetics.
<i>Eucalyptus globules</i> Labill.	Myrtaceae	Latex is applied on the skin to alleviate body pain & never disorders.
<i>Euphorbia antiquorum</i> L.	Euphorbiaceae	Latex applied on skin to relive body pain. Bark paste applied on cut/wounds and fruit taken to treat diabetics.
<i>Ficus bengalensis</i> L.	Moraceae	Seed soaked in water and the water is taken to treat diabetics.
<i>Ficus</i> sp.	Moraceae	Root extract in water applied over the joints reduces joint pain, latex applied on the skin to cure skin infections.
<i>Gmelina arborea</i> Roxb.	Verbenaceae	Bark juice taken to treat piles
<i>Gymnema sylvestre</i> (Retz.) R. Br.	Asclepiadaceae	Tender fresh leaves and dried powder are used to cure diabetes. Cooked leaves may also be used.
<i>Haloptetea integrifolia</i> L.	Ulmaceae	Bark is tied over wound infected area to reduce pus formation.
<i>Hemidesmus indicus</i> H.f.	Asclepiadaceae	Leaves taken to treat fever.
<i>Henckelia incana</i> (Vahl) Spreng	Gesneriaceae	Leaf ground in water is mixed with salt taken orally to treat fever.
<i>Hibiscus rosa-sinensis</i> Linn.	Malvaceae	Leaf juice is taken to treat diabetics, alleviate headache.
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ulmaceae	Bark is made into paste and applied over the affected places to cure paralysis.
<i>Hybanthus enneaspermus</i> (L.) F.V. Muell.	Violaceae	Leaves used as green vegetable to strengthen the body.
<i>Ipomia staphylina</i> Roemer.	Convolvaceae	Tender leaves are mixed with betel leaves and made into paste. The paste obtained is given orally to women during delivery time to ease the falling of placenta.
<i>Ipomoea batatas</i> (Linn.)	Convolvaceae	Tubers boiled and taken to treat diabetics.
<i>Jatropha glandulifera</i> Rox.	Euphorbiaceae	Latex is used as a mouth wash to cure teeth and gum infection.
<i>Lantana camara</i> Linn.	Verbenaceae	Leaf juice improves digestion in children and fruits - treat diabetics.
<i>Lawsonia inermis</i> Linn.	Lythraceae	Leaves applied on foot to cure etching and healing of the crack.
<i>Lucas aspera</i> Sprong.	Lamiaceae	Leaves used to relive tooth ache and prevents tooth/gum infection.
<i>Mangifera indica</i> L.	Anacardiaceae	Dry seed powder with cow's milk cures dysentery and treat diabetics.
<i>Momordica charantia</i> L	Cucurbitaceae	Fruit juice is taken to treat diabetics
<i>Murraya koeingii</i> (L.) Spreng.	Rutaceae	Leaf juice is taken to treat diabetics.
<i>Musa paradisiaca</i> L.	Musaceae	Stem extract reduces the effect of snake poison and treat diabetics.
<i>Nelumbo nucifera</i> Gaertn.	Nymphiaceae	Flowers made to juice and taken to treat diabetics.
<i>Ocimum basilicum</i> L.	Lamiaceae	Leaves chewed to induce saliva secretion, keeps mouth fresh, headache.

<i>Ocimum santum</i>	Lamiaceae	Dry leaf powder honey is used to cure dry cough and diabetics.
<i>Ormocarpum cochinchinense</i> (Lour.) Merr.	Fabaceae	Leaf paste is mixed with goat's milk and egg and applied on fractured area to heal soon. The mixture is taken orally to boost immunity power and body strength.
<i>Oxalis corniculata</i> L.	Oxalidaceae	Leaf juice is taken orally to make body cool.
<i>Parthenium hysterophorus</i> L.	Asteraceae	Leaf paste is mixed with castor oil and applied over stomach to reduce stomach pain.
<i>Pergularia daemia</i> (Forrsk.) Chiov.	Asclepiadaceae	Leaf juice is applied over the throat to cure throat infection.
<i>Phlebophyllus kunthianum</i> Nees.	Acanthaceae	Leaf paste applied to treat nerve disorders.
<i>Phyllanthus amarus</i> Schum. & Thonn.	Euphorbiaceae	Leaf paste mixed with buffalo urine, taken internally to cure jaundice.
<i>Phyllanthus niruri</i>	Euphorbiaceae	Whole plant juice given to treat jaundice, alleviate headache.
<i>Piper nigrum</i> L.	Piperaceae	Seeds taken orally to reduce throat infection, cold and cough.
<i>Plectranthus coleoides</i> Benth.	Lamiaceae	Leaf juice of taken to reduce body pain.
<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Root powder taken to treat stomachache.
<i>Plumeria obtuse</i> L.	Apocynaceae	Latex is used as a mouth wash, and used to cure mouth ulcer.
<i>Plumeria rubra</i> L.	Apocynaceae	Bark is made into paste with egg and goat's milk and taken orally in empty stomach to cure spider bite, snake bite and scorpion sting.
<i>Psidium guajava</i> L.	Myrtaceae	Leaf is mixed with the leaves of <i>Diospyros chloroxylon</i> (Roxb.), <i>Choloroxylon swietenia</i> DC. and made into paste. The paste is taken orally to cure snakebite.
<i>Pulumaria acutifolia</i> Pair.	Apocynaceae	Latex Mouth ulcer
<i>Pulumaria rutral</i> L.	Apocynaceae	Flower Anti inflammation
<i>Punica granatum</i> L.	Punicaceae	Fruit scure gastrointestinal problems and treat diabetics.
<i>Solanum nigrum</i> L.	Solanaceae	Leaf juice taken orally cures stomach ulcer and digestion.
<i>Solanum surattrense</i> Burm. f.	Solanaceae	Fresh fruits kept in fire and the smoke is inhaled to reduce toothache.
<i>Solanum trilobatum</i> L.	Solanaceae	Juice of leaves is taken orally to cure asthma and cold.
<i>Sonchus oleraceus</i> L.	Asteraceae	Leaf paste applied externally on wounds.
<i>Strychnos nux-vomica</i> L.	Loganiaceae	Small amount of bark is made into paste along with goat's milk and taken orally for 3 months to cure whooping cough.
<i>Strychnos potatorum</i> L.	Loganiaceae	Seed paste is mixed with honey and applied topically to treat chronic wounds and infections, particularly knee joint wounds and infection.
<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Seed powdered and used to treat diabetics and reduce the level of sugar in the blood.
<i>Tamarindus indica</i> L.	Caesalpinaceae	Bark powder in coconut oil is used to cure skin disease.
<i>Tarstenia brasiliensis</i> L.	Moraceae	Root Joint pain
<i>Terminalia chebula</i> Retz.	Combretaceae	Fruit is made into paste with castor oil and applied over cuts and wounds to heal soon. Tender fruits are boiled with salt and eaten to cure ulcer.
<i>Toddalia asiatica</i> (L) Lam.	Rutaceae	Leaves are made into paste and given orally to cure gas troubles in cattle.
<i>Tribulus terrestris</i> L.	Zygophyllaceae	Fruit Fertility
<i>Tribulus lanuginosis</i> L.	Zygophyllaceae	Seed powder used to increase fertility and sperm production.
<i>Trigonella foenumgraecum</i> L.	Fabaceae	Seed soaked in water and used to treat diabetics
<i>Tylophora indica</i> (Burm. f.) Merr.	Asclepiadaceae	Leaf paste is taken orally to treat fever and Cold. Fresh leaves are taken with honey for 48 days to cure respiratory problems.
<i>Vitex negundo</i> L.	Verbenaceae	Leaves boiled in water; inhaled to relive headache, cold.
<i>Withania somnifera</i> (L.) Dunal.	Solanaceae	Leaf paste in cow's milk used to treat asthma.
<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Apocynaceae	Smoke obtained from the dried leaves is used to repel flies in cattle.

However, in most of the cases, it was recorded that internal uses predominates external application. Juice and paste formulations were quite common for external applications. For topical application, the paste was mixed with oil. If more than one plant is used, such preparations are more or less similar to Siddha formulations. Sometimes the healer may mix several plants as ingredients to cure a single disease but detailed information on the role of the components used in such formulations are obscure.<sup>[24]</sup>

The most important aspect of the Malayali tribal medicine is that fresh plant material is used for the preparation of medicine. Alternatively, if the fresh plant parts are not available, dried plant materials are used. For this reason several plants serve as alternative remedy to cure a single disease. From this study it is clear that Malayali tribal possess innate ability to discern the character of plants and exploit the plant resources to meet their health care needs.

**CONCLUSION**

This study depicts that traditional knowledge forms the basis for the treatment of various ailments among Malayalis. Still, this age old practice forms the basic aspect of their lifestyle and rituals. Plants such as *Andrographis*, *Adhatoda*, *Vitex* and *Plectranthus* are the lead species and members belonging to the family Apocynaceae, Asclepiadaceae, Euphorbiaceae and Caesalpinaceae were more frequently used. Data depicts that most of the remedies are preferred as oral. Further, most of the reported preparations are drawn from a single plant; formulations containing two or more plants are rarely used. Present study reveals that medicinal plants continue to play a major role in healthcare needs of Malayali community.

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