

# Ethno-Botanical Survey of Medicinal Plants used by *malai kuravargal* in Malayur, Dharmapuri district, Eastern Ghats, Tamil Nadu, India.

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**Abstract:** The objective of the present study was to identify and document their indigenous knowledge on the utilization of medicinal plants used by *malai kuravargal*. Field survey was conducted from March-2017 to March-2018. Ethno-medicinal Information was collected through questionnaire, group discussion and Interviewing among the Traditional healers and Local Tribal peoples. A total of 72 plant species belonging to 44 families were identified commonly used ethno-medicinal plants in the study. The *Malai kuravargal* most used plant parts Leaf, Root as well as most of the medicine prepared in the form Powder, Decoction and Paste. The plants were mostly used to cure for cold, diarrhea, Diabetes, wounding, Injury problem chicken pox, smallpox, cough, headache, and stomach ache etc. The results inventoried a wide range of plants were used to treat various common human ailments, fodder and food by the villagers in Malayur village.

**Index Terms -Ethno-medicine, Malai kuravargal, Traditional healers, Dharmapuri**

## I. INTRODUCTION

Ethno-botany is a study of relationship between tribal people and plants. Medicinal plants have played an important role in treating and preventing a variety of diseases and disorders problems in all over the world. India is the second largest country in the world with over one billion people with diverse socio-cultural backgrounds. It accounts for 16% of the world's population and holds 21% of the world's global burden of diseases. The impact of traditional systems of medicine in the public healthcare system of India is substantially high and medicine is intimately interwoven with religiosity and ethnicity (Broom et al., 2009). The Plant based medicines are more effective, sage and inexpensive are gaining popularity among the both rural and urban areas. Now all over the World pharmaceutical industry are rapidly prepared into poor-quality medicines and worldwide before adequate detection and intervention are possible information from ethnic groups or indigenous traditional medicines has played a viral role in the discovery of novel products from plants as chemotherapeutic agents (Katewa et al., 2004). They are appropriate sources of information about useful medicinal plant species, which can be targeted for management and domestication (Njoroge et al., 2004). Currently, 25% of herbal drugs in modern pharmacopeia are plant based and several synthetic drugs are manufactured by using chemical substances isolated from plants (WHO, 2002). In recent era, the role of medicinal plant species in traditional health practice has diverted the attention of researchers towards ethno-medicine. World Health Organization were reported Almost 80% of population in world relies upon plant based traditional medicines for primary health care (Cordell & Colvard, 2012).

India has one of the 12 mega biodiversity countries of the world and is recognized as a country that is rich in all types of biodiversity such as ecosystem, species, and genetic diversity mainly due to its tropical location, disparate physical features, and climatic types are present (Jain, 1967). India has one of the richest traditionally used medicinal plant in the country. Whether it is distributed to be around 25,000 effective plant-based formulations are known to rural communities in india and used as folk medicine (Bogers et al., 2006). The Indian systems of medicine include Ayurveda, Homeopathy, Siddha and Unani, which are the most ancient restorative practices, known to the world and derive greater formulations from plants and plant extracts. These

systems comprise a wide range of therapeutic approaches that include diet, herbs, metals, minerals, precious stones and their combinations as well as non-drug therapies. (Gogtay et al., 2002).

Malayur is a small hill station with Tropical reserve forest and rich in Variety of flora. Malayur is located in Pennagaram, Dharmapuri, Tamil Nadu, India. The aim of the present study is to highlight the traditionally used medicinal plant surveyed in Malayur. To encourage the local communities in younger generation to propagate and protect the medicinal plant. To conservation on rare, endemic and endangered medicinal plant in study area.

## II. MATERIALS AND METHODS

### Study area:

The present study was conducted in Malayur. It is located in Dharmapuri district, Tamil Nadu, India. Malayur Latitude 12° 13' N and Longitude 78° 00' E and altitude of 503 meters. The maximum temperature ranges between 25-27° C. The average annual rainfall is around 1200mm. Malayur soil type ranges from red, reddish brown to Black. It is a tropical reserve forest rich in variety of plants.

### Malai kuravargal Tribal People:

The Native Tribal people of Malayur hills are called as *Malai kuravargal*. The Tribal people are also spread along the adjacent hills ranges, The Malai Kuravan also called the *Malai Kuravar* and Malakkuravan as well as the Malai Vedans are believed to have migrated to their present habitat in the Dharmapuri, Athur, Thiruvannamalai, Vellore, Kanyakumari, Poddigai, Valparai, Ananur, Kadambur, Ooty, Thoothukudi. These Tribals speak in Tamil and basically depend on agriculture and forest resources for their survival.

### Data Collection

The study was conducted during September-2017 to September-2018. The local people including traditional healers and practitioners with rich knowledge in medicinal plants were selected for the data collection about Ethno-medicinal information. The information was documented through a survey, interviews and field work. The collected plants species were identified using- The flora of Presidency of Madras and the Flora of Tamil Nadu Carnatic (Gamble, 1935).

## III. RESULTS

A total of 72 plant species belonging to 44 families have been documented in the present study for their interesting therapeutic properties in treating various disease and disorders problems. The medicinal plants are arranged alphabetically with Scientific name, Common name, Family, Plant parts used and Therapeutic uses (Tables 1). The most dominant families were Fabaceae, Moraceae, Acanthaceae, Malvaceae, Curcubitaceae, Amaranthaceae. The remaining families such as Violaceae, Oxalidaceae, Lamiaceae, Meliaceae, Aizoaceae showed lesser amount of presence. The data of plant representation based on its habit was as shown in (Figures 1). It had Herb (37%), Shrub (30%), Tree (20%) Small Tree (10%) and Climber (15%). The most frequently utilized medicinal plant parts were Leaves (70%) followed by Root (37%), Fruit (33%), Whole plant (15%), Bark, Seed (5%) and Flowers (25%) (Figures 2). Traditional healers in Malayur prepared medicine in the form of Powder, Paste and Decoction. Most of the Medicines were prepared as Powder. The Majority of medicine cured diseases such Cough, Cold, fever, Diabetes, Mouth joint pain problems, snake bites, Skin infection, digestive problems.

Table 1. List of the plants used by *Malai Kuravargal* in Malayur

S. No	Botanical Name	Habit	Tamil Name	Parts	Family	Medicinal Uses
1.	<i>Abrus precatorius L.</i>	Shrub	Kunri	Leaves	Fabaceae	Leaf paste used to treat cough and mouth ulcer.
2.	<i>Abutilon indicum L.</i>	Shrub	Thuthi	Leaves	Malvaceae	Leaf paste for treating fever, cough and lung problems.
3.	<i>Achras zapota L.</i>	Tree	Sapoda	Leaves	Sapotaceae	Leaf powder used to treat lung problem; children's dysentery problem.
4.	<i>Adhatoda vasica L.</i>	Tree	Adhatoda	Roots	Acanthaceae	Leaf powder and juice for treating asthma, bronchitis, cough, colds and throat problems.
5.	<i>Aerva lanata Juss L.</i>	Herb	Sirukanpeelai	Whole Plant	Amaranthaceae	Whole plant powder to treat kidney stones; decoction of the root as tonic to pregnant women.
6.	<i>Alternanthera sessilis L.</i>	Shrub	Ponnaanganni	Whole Plant	Amaranthaceae	Whole plant paste used to treat skin problem; joint pain problems.
7.	<i>Amaranthus graecizans L.</i>	Shrub	Sirukeerai	Whole plant	Amaranthaceae	Leaf juices used to treat urinary problems.
8.	<i>Andrographis paniculata Burm.F.</i>	Herb	Nilavembu	Leaves	Acanthaceae	Leaf juice to treat common cold and fever.
9.	<i>Argemone mexicana L.</i>	Herb	Kudiyotti	Leaves, Root	Papaveraceae	Leaf juice to treat urinary infection, skin disease.
10.	<i>Aristolochia bracteolata L.</i>	Herb	Adutinna palai	Leaves, Root	Aristolochiaceae	Leaf powder to treat snake bites and cold.
11.	<i>Azadirachta indica A.Juss.</i>	Tree	Vembu	Leaves	Meliaceae	Leaf powder to decrease blood sugar.
12.	<i>Begonia malabarica Lam.</i>	Shrub	Kayyalappuli	Fresh, Leaves	Begoniaceae	Fresh leaves used for respiratory infections, diarrhea and skin diseases treatment.
13.	<i>Blepharis maderaspatensis L.</i>	Herb	Kooravaal Chedi	Leaves, Root	Acanthaceae	Leaf and root powder used for heart disorders

						problems cure.
14.	<i>Boerhavia erecta L.</i>	Herb	Simai Mukkirattai	Leaves, Root	Nyctaginaceae	Leaf paste to treat for diuretic and root powder used for jaundice.
15.	<i>Calotropis gigantea L.</i>	Herb	Yerukkam	Root, Bark	Asclepiadaceae	Root powder used to cure itching, and snake bites. Bark to treat injuries; bowel worm infection.
16.	<i>Chlorophytum tuberosum Roxb.</i>	Shrub	Kapalai	Leaves	Asparagaceae	Leaf extract used to cure fever.
17.	<i>Centella asiatica L.</i>	Herb	Valarai	Leaves	Apiaceae	Leaf powder used to cure fever, blood purification and throat problems.
18.	<i>Cleome gynandra L.</i>	Herb	Nelavelai	Leaves	Cleomaceae	Leaf powder used for urinary problems such as cystitis; it also boosts the immune system.
19.	<i>Clitoria ternatea L.</i>	Shrub	Sangupu	Leaves	Fabaceae	Few fresh leaves are boiled and decoction used to treat cough.
20.	<i>Corallocarpus epigaeus Rottl. C.B.Clark.</i>	Climber	Akaya Karudan	Whole Plant	Cucurbitaceae	Whole plant powder to treat, skin disease, tumors, cough and Bronchitis.
21.	<i>Coccinia indica L.</i>	Climber	Kovai	Leaves, Fruit	Cucurbitaceae	Leaf paste to cure fever, asthma, bronchitis and jaundice; fruits to treat for joint pain problems.
22.	<i>Cynodon dactylon L.</i>	Creepers	Arugampillu	Leaves	Poaceae	Leaves powder to increase red blood cells(RBC) count.
23.	<i>Dalbergia sissoo Roxb.</i>	Tree	Chisel Maram	Bark, Leaves	Fabaceae	Bark, leaf powder used for treatment nose and eye disorder; and fever.
24.	<i>Datura metel L.</i>	Shrub	Oomathai	Leaves, Fruit	Solanaceae	The leaf used to relieve headache, the leaf smoke of datura is good to treat asthma.
25.	<i>Desmodium gangeticum L.</i>	Herb	Pulladi	Leaves	Fabaceae	Leaves powder used for diarrhea, dysentery and piles.

26.	<i>Desmodium gangeticum L. DC.</i>	Shrub	Muvellai	Leaves	Fabaceae	The leaf powder used for fever treatment.
27.	<i>Dodonaea viscosa L.</i>	Tree	Verrali	Leaves	Sapindaceae	Leaves paste used for treatment of broken bone and bone swellings.
28.	<i>Enicostemma axillare LAM.</i>	Herb	Vallarai	Leaves	Gentianaceae	Leaf paste and powder to treat fever; leaf powder used for snake bite treatment.
29.	<i>Evolvulus alsinoides Linn.</i>	Shrub	Visnukiranti	Leaves	Convolvulaceae	Leaf paste used for chronic bronchitis, asthma and ulcers.
30.	<i>Euphorbia hirta L.</i>	Herb	Amman Pacharisi	Leaves	Euphorbiaceae	Leaf powder and paste used for fever and cold.
31.	<i>Ficus benghalensis L.</i>	Tree	Allamaram	Leaves	Moraceae	The leaf to treat bleeding and swelling.
32.	<i>Ficus microcarpa L. F.</i>	Tree	Athi	Fruits	Moraceae	Fresh fruits to increase sperm count and fertility.
33.	<i>Ficus religiosa L.</i>	Tree	Arasamaram	Fruits, Leaves, Buds	Moraceae	Leaves to cure diarrhea and wound healing.
34.	<i>Ficus racemosa L.</i>	Tree	Malai Munivaan	Leaves, Fruit	Moraceae	Leaves powder is a very effective for any kind of mouth problems; Asthma and abdominal pain.
35.	<i>Glinus oppositifolius L.</i>	Shrub	Thura Poondu	Leaves	Molluginaceae	Leaf powder to promote digestion.
36.	<i>Gymnema sylvestre R. Br.</i>	Shrub	Cirukurinjan	Leaves	Apocynaceae	Leaf powder to treat snake bite and it also reduces high blood pressure.
37.	<i>Hibiscus Rosa-sinensis L.</i>	Herb	Sembaruthi	Leaves, Flowers	Malvaceae	Leaves used treat for loss of hair, and graying of hair. Flower- petal tonic to strengthen heart.
38.	<i>Hybanthus enneaspermus L.</i>	Shrub	Orilai Thamarai	Leaves, Root	Violaceae	Leaf powder to treat dysentery, vomiting, asthma and cough; it is also used as pain relief. Root powder used for diuretic.

39.	<i>Hygrophila auriculata</i> Schumach.	Shrub	Nirmulli	Leaves	Acanthaceae	Leaf paste to treat urinary tract infection.
40.	<i>Lannea coromandelica</i> Houtt.	Tree	Othiyam Maram	Bark	Anacardiaceae	The bark paste to treat stomach pain; decoction of the paste to cure mouth and toothache.
41.	<i>Lawsonia Inermis</i> L.	Shrub	Maruthani	Leaves	Lythraceae	Leaf powder used for cold.
42.	<i>Leucas aspera</i> L. R.Br. Ex Vatke	Shrub	Thumbai	Whole Plant	Lamiaceae	Whole plant to treat snake bite.
43.	<i>Marsilea quadrifolia</i> L.	Herb	Aarai	Leaves	Marsileaceae	Leaf powder to treat cough, diabetes, diarrhea and skin diseases.
44.	<i>Melochia corchorifolia</i> L.	Herb	Punnakku kkirai	Leaves, Root	Malvaceae	Leaf powder to treat ulcers, abdominal swelling, and headache. Roots and leaves used for treating snake bites.
45.	<i>Merremia emarginata</i> Burm. F.	Herb	Elikkadhu- Keerai	Leaves	Convolvulaceae	Leaf powder used for treatment of cough.
46.	<i>Moringa oleifera</i> Lam.	Tree	Murungai	Fruit	Moringaceae	Boiled fruits to increase sperm count in men.
47.	<i>Mukia maderaspatana</i> L. M.Roem	Climbers	Musumukai	Leaves	Cucurbitaceae	Leaf juice to treat constipation and gastric problems.
48.	<i>Murraya koenigii</i> L.	Shrub	Karuvapellai	Leaves	Rutaceae	Leaf powder to treat stomach pain and cold.
49.	<i>Passiflora foetida</i> L.	Climbers	Siruppunaikkali	Leaves ,Flowers	Passifloraceae	Leaf paste to treat asthma.
50.	<i>Pedaliium murex</i> L.	Herb	Yannai nangile	Leaves	Passifloraceae	Leaf powder to treat wounds, earaches and liver problems.
51.	<i>Phyllanthus niruri</i> L.	Herb	Kelanalli	Leaves	Phyllanthaceae	Leaf powder to treat jaundice and liver problems cure.
52.	<i>Physalis minima</i> L.	Herb	Sodakku Thakkali	Fruit , Leaves	Solanaceae	Fruits and leaf paste as instant pain reliever.



53.	<i>Plumbago zeylanica</i> L.	Herb	Cittuilinkam	Leaves, Roots	Plumbaginaceae	Leaf and root powder to treat diarrhea and digestive disorders.
54.	<i>Polygonum plebeium</i> R.Br	Climbers	Niralari	Leaves	Polygonaceae	Leaf paste to treat bones, kidneys and liver disorders.
55.	<i>Portulaca oleracea</i> L.	Herb	Taraikkirai	Leaves	Portulacaceae	Leaf powder to treat for uterine bleeding, asthma and type ii diabetes.
56.	<i>Pterocarpus marsupium</i> Roxburgh.	Tree	Vengai	Leaves, Bark	Fabaceae	Bark powder treat for decrease blood sugar levels.
57.	<i>Oxalis latifolia</i> Kunth	Herb	Pulicha kerai	Leaves	Oxalidaceae	Leaf powder used for ulcers, cuts and skin infections treatment.
58.	<i>Saraca asoca</i> Roxb.	Tree	Ashoka maram	Leaves, Flowers	Fabaceae	Boiled flowers to treat diabetes, blood pressure and hepatitis problems.
59.	<i>Sida cordifolia</i> L.	Shrub	Sida Muthi	Leaves	Malvaceae	Leaves powder used for the treatment of inflammation of the oral mucosa, blenorrhea and asthma
60.	<i>Sida rhombifolia</i> L.	Shrub	Kuranotti	Leaves, Fruits	Malvaceae	Fruits powder used to relieve headache. Leaves for treating diarrhea.
61.	<i>Solanum nigrum</i> L.	Herb	Manittakkali	Fruits	Solanaceae	The fruits are used as a health tonic. Fruit powder extract used for asthma treatment.
62.	<i>Stachytarpheta indica</i> L.	Shrub	Ceemai-Nayuruvi	Seed	Verbenaceae	Seed powder used for treating intestinal worms, venereal diseases and ulcers.
63.	<i>Syzygium cumini</i> L.	Tree	Novel	Leaves	Myrtaceae	Leaf powder to cure diabetes; and digestive problems.
64.	<i>Tamarindus Indica</i> L.	Tree	Puliya Maram	Leaves, Fruit, Bark	Fabaceae	Leaf powder to treat asthma and throat infection.
65.	<i>Tarenna asiatica</i> L.	Shrub	Kattumilaku	Fruit,	Rubiaceae	Leaves paste is applied

				Leaves		for wound healing.
66.	<i>Trianthema decandra</i> L.	Creeper	Shavalai	Leaves, Root	Aizoaceae	The roots to treat hepatitis and asthma.
67.	<i>Tribulus terrestris</i> L.	Creeper	Nerunci	Leaves, Root	Zygophyllaceae	Leaf powder for treating heart disease; certain sexual problems; insomnia; and muscle ache.
68.	<i>Tribulus alatus</i> L.	Creeper	Ceppu nerunci	Leaves, Root	Zygophyllaceae	Leaf powder used treat reduction of stomach pain, cramp, diarrhea, nausea and vomiting.
69.	<i>Tridax omanense</i> L.	Creeper	Vatukai Pundu	Flowers, Leaves	Asteraceae	Leaf powder used to treat infectious skin diseases; cures sores and ulcers. It is used as antiseptic.
70.	<i>Vitex negundo</i> L.	Small Tree	Vennocci	Leaves	Lamiaceae	Leaf powder to reduce inflammation of the body and helps relieve skin problems.
71.	<i>Withania somnifera</i> L.	Shrub	Amukkira	Leaves	Solanaceae	Leaf powder used to improve blood circulation.
72.	<i>Ziziphus jujuba</i> Mill.	Tree	Elanthai	Leaves	Rhamnaceae	Leaf powder to treat tumor.

Fig: 1 Habit wise used medicinal plants in *Malai kuravargal* in Malayur



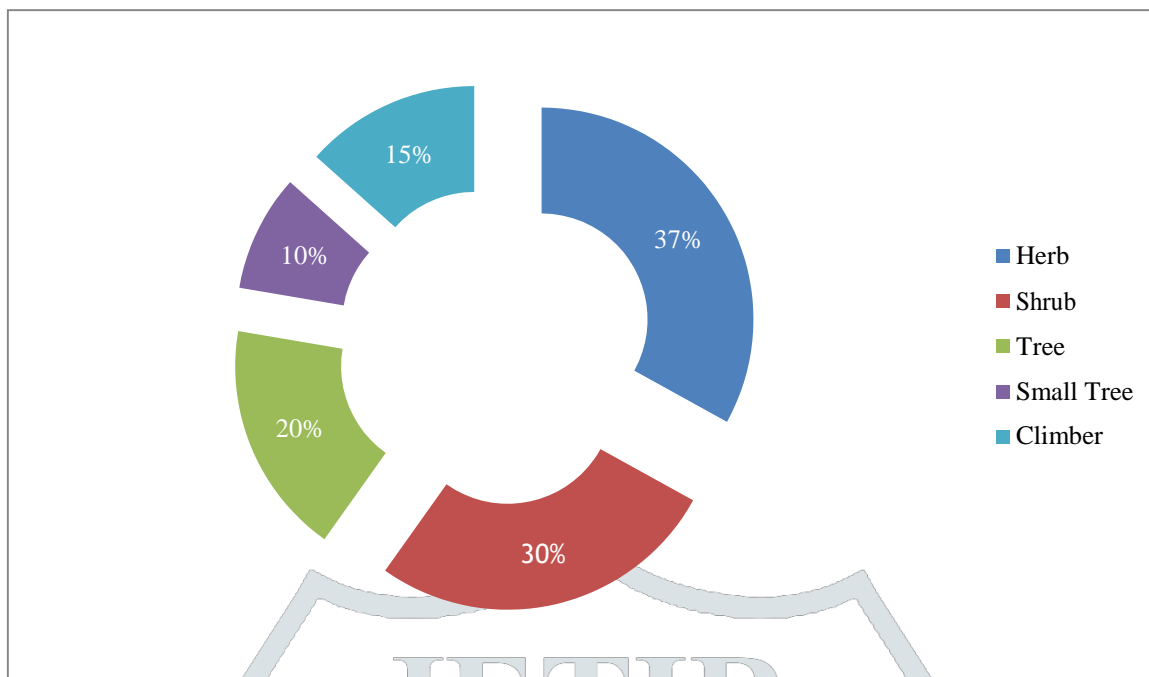
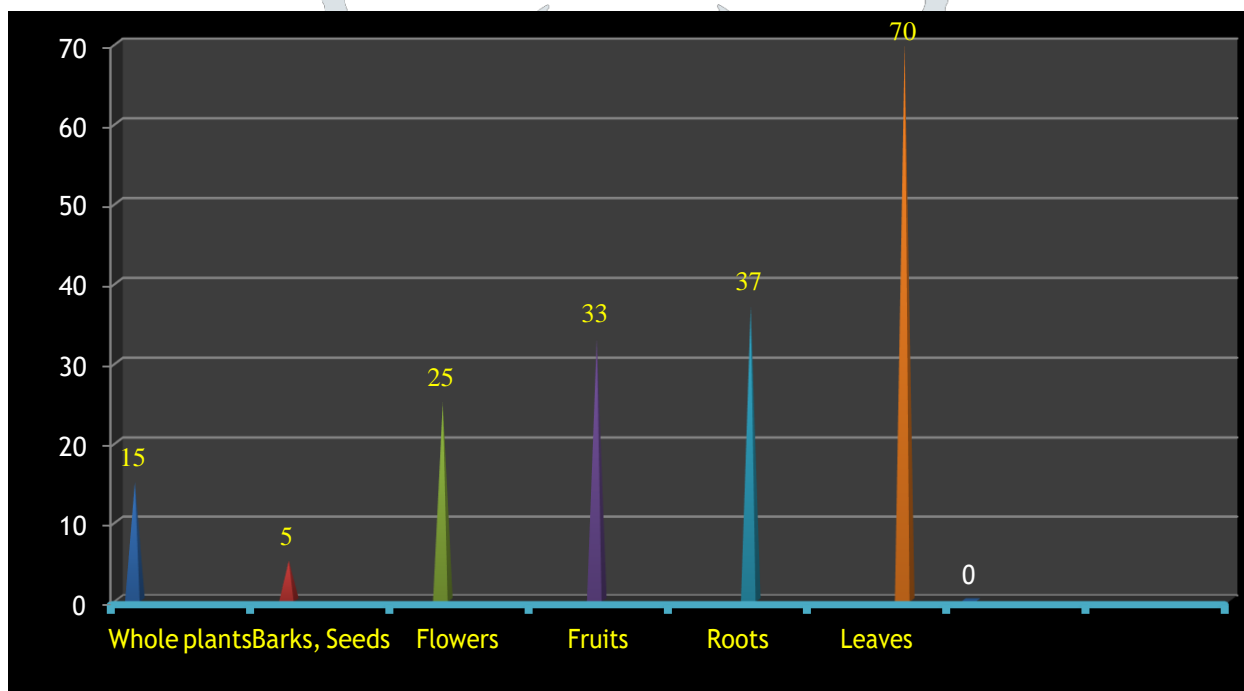


Fig: 2 Medicinal plants parts percentage used in Malayur Tribal people



#### IV. DISCUSSION

The tribal communities have not forgotten their age-old ethnicity and traditions. Medicinal plants Knowledge, which is used in their daily life against different ailments, still lies with them. Irular community inhabiting in Pillur valley, Coimbatore, over two years registered 85 taxa that possess medicinal values. These species have been used in treating various ailments. Many of the Irulars living in Pillur Valley rely immensely on the folk medicine, although modern medicine facilities have been made accessible. The cost of receiving this treatment is almost one tenth of a percent compared to modern medicine. Furthermore, herbal medicines and healers are available locally. Unfortunately, as universally observed, the invaluable knowledge is exceedingly limited to traditional healers and few elderly people living in the local community. These traditional healers are decreasing sharply, posing serious threat to the loss of this precious knowledge ( Ganesh et al., 2016).

Ethno-medicinal plants used by ethnic people in Pachamalai hills for the treatment of various ailments based on the disease affected body systems treated. Leaves are the most frequently used plant parts and most of the medicines are prepared in the form of paste, administrated orally, topically and brush (Parthiban et al., 2016). Rajgond Tribal of Haladkeri Village in Bidar district is far away from modern medicine even in 21<sup>st</sup> century and is known for their unique way of life and disease management (Suryawanshi Pooja et al., 2015).

The Malaiyali tribes of various Parts in Tamil Nadu shared knowledge of the Ethno-medicinal plants to used in “Neenda ayil” which translate to “living long healthy life”. The Malaiyalis are also being lives in spiritualism for which they utilize many Ethno-medicinal plants. The Most demand of Ethno-medicinal plants and have been motivation and conservation of these plant species (Vaidyanathan et al., 2014). Jawadhu hill’s in Thiruvannamalai district have a huge relations with their surrounding environment condition. The variety flora of Jawadhu Hill’s include a large number of medicinal plants are present (Ranganathan et al., 2012).

The irula Tribal of Hasannur Hills, Erode, tribal communities naturally rich in knowledge about medicinal plants and its uses. The data collected shows that majority of the remedies are taken orally. Herbal medicines prescribed by tribal people are either preparation based on single plant or a combination of several plant parts. Most of the reported preparations are drawn from a single plant; mixtures are used rarely. The fresh plant parts are used for the preparation of medicine. When fresh plant parts are unavailable, dried parts are also used. Generally, the people of the study area still have a strong belief in the efficacy and success of herbal medicine (Revathi and Parimelazhagan, 2017).

## V. CONCLUSION

The present study was conducted in Malayur. It is located in Dharmapuri district, Tamil Nadu, India. A total of 72 plant species belonging to 37 families were identified and documented. Traditional healers in Malayur are rich in Knowledge about How to use medicinal plants and their therapeutic value. The study need to be evaluated through phyto-chemical and pharmacological investigations to discover new drugs.

## ACKNOWLEDGMENT

We are all Authors would like to express gratitude and thanks to Tribal people and for providing information about the medicinal plants uses and also thanks to forest officers for their kind of co-operation.

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