

## RESEARCH ARTICLE

## DOCUMENTATION OF MEDICINAL PLANTS USED BY THE TRADITIONAL HEALERS, MAYANNUR FOREST, THRISSUR DISTRICT, KERALA, INDIA

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## ABSTRACT

The study was carried out to document the medicinal plants used by the traditional healers in Mayannur Forest, Thrissur District, Kerala, India. In the present study, 107 plant species belonging to 46 families were documented in the Mayannur forest, Kerala. The informants of an age group ranging from 50-80 were selected for collecting data of the plants in the forest. The medicinal plants such as herbs (36%), shrub (19%), trees (27%) and climbers (18%) were mainly used by traditional healers for the treatment of fever, wound healing, skin diseases and menstrual problems. *Saraca asoca* was mainly in the traditional medicines to cure diseases and for treating menstrual problems. Medicinal plants used by the traditional healers were documented along with their scientific name, common name and medicinal uses. The present study shows that, the plant material mainly used was leaves for the treatment of diseases. Among the 107 plant species Rare Endangered Threatened (RET) plant species were also documented. Documentation of knowledge and conservation of the endangered plants helped for the sustainable development.

**Keywords:** Mayannur Forest, Traditional healers, Medicinal plants, RET plants

## 1. INTRODUCTION

Biodiversity is the variety of life forms on earth. India is the richest country in biodiversity. Indian flora has 10.78% of the total global flora. Biodiversity facing an unpredictable destruction by humans and environmental changes which result in the expiration of many forest flora and fauna [1]. Forest have greater impact on life, as they derive food, fodder, medicine, housing material and it also has the largest demand for fuel and wood. Due to increasing demand of forest products and various anthropogenic activities many plant species have been disappearing. Forests are dominant terrestrial ecosystem of earth, having 75% of gross primary production [2]. It is the storehouse of flora and fauna. In the present century, civilization is dominating the forest involving self-destruction of forest. Floristic inventory is a taxonomic study of a major division of flora in a particular area [3]. They are vital prerequisite for fundamental research in the tropical community, ecology such as modelling patterns of species diversity and understanding the species distribution.

Floristic studies have promising importance in recent years, in developing and under developing countries to document their plant wealth. The forests are disappearing at alarming rates owing to deforestation for extraction of fire wood and other forest products. It facilitates, to know the basic aspects of evolution, isolation and endemism. Flora of an area is not a fixed one, it changes from time to time. Identification of local plants along with description of an area is essential, as it can provide information about particular species in local area, its growing season, species hardness of any new species establishing in a particular area and effect of climate conditions like over grazing and drought on vegetation [4]. The knowledge of floristic composition is essential to understand the ecosystem of an area. The study also reflects the variety of vegetation of a specific geographical area, which provides an occasion for proper identification and sustainable utilisation of plants. The data of flora of an area is necessary for the study of biodiversity and understanding the present environment [5]. This study is not only a good source of botanical information of a geographical area, but also provides a suitable

starting point for further comprehensive studies. The present study was conducted to document the diversity of medicinal plants of the Mayannur Forest, in Mayannur village, Kerala.

## 2. MATERIALS AND METHODS

### 1.1. Study Area

The Study was carried out in Mayannur Forest, Mayannur village Thrissur district, Kerala. The Forest is 10°23'0" N 76°42'30" E and covers 285 square kilometre, and has tropical Climate with an average of minimum temperature varying from 8°- 14°C and an average of maximum temperature from 23°- 29°C. The hottest month and the coolest month are April-May and January-February. The annual average rainfall is from 2717 to 4543 mm. The forest has red soil, blackish brown and reddish brown soil. There are small streams running inside the forest which add beauty to the forest and so far no systematic ethno botanical survey has been made in this area and this is the first report on the medicinal plants. Life styles of people living in the forest are poor and economically, they depend on cattle grazing, agriculture and use of natural resources from the forest for their livelihood.

### 1.2. Data collection

Extensive and repeated field survey was carried out during the month of May – December, 2020. A comprehensive checklist of plants was prepared to understand the range of distribution of species, ecological variations and type of adaptation. The plants are enumerated alphabetically with their botanical name with author citation, family name, habit form by referring to Flora of Presidency of Madras [6] and Flora of Presidency of Tamil Nadu Carnatic [7]. The botanical data's were collected through discussions among traditional healers and local people residing near the study area. Most of the information was gathered from elderly people of an age group ranging from 50-80. The informants are selected based on their sound knowledge of the medicinal plants. This information has transferred to successive generations.

### 1.3. Interview with the Informants

Medicinal plants information was collected from the informants with the age group ranging from 50 – 80, through interview and oral conversation. Questionnaires were used to obtain

information on medicinal plants, their local names, parts used and their mode of administration etc.

### 1.4. Preservation of plant specimens

Standard method was followed for the collection of plant specimens, drying mounting, preparation and preservation of plant specimens. Identified plants were arranged alphabetically with their botanical name with author citation, family and habit referring to Flowering plants of Kerala [8] Flora of Presidency of Madras [6] and Flora of Presidency of Tamil Nadu [7]. The preserved Herbarium was deposited in the Department of Botany, Nirmala College for Women, Coimbatore.

## 3. RESULTS AND DISCUSSION

Traditional knowledge of indigenous plants and uses of native medicinal plants were studied and documented. The present study showed that 107 species were belonging to 42 families, and used traditionally by the local people residing near the forest. (Table 1). Among the families, Fabaceae (10 species) has the highest number of species followed by Asteraceae (9 species) and Amaranthaceae (6 species). Different habits of the medicinal plants such as herbs (39), shrubs (20), climber (19) and trees (29) were found in the study area. Different parts of the plants were used to prepare medicines by using local traditional healers, among them 49% of the medicines were prepared by using leaves followed by the whole plant (29%), bark (8%), fruit (8%) and seeds (6%). In Ayurveda, mostly leaves were used for preparing herbal formulation. Mayuri *et al.*, [9] reported that leaves are the most frequently used parts than the other parts.

The medicine prepared from the plants involve various processes such as pasting, decoction, juice, tea and also used to cure various diseases like menstrual disorders, fever, and arthritis. Before giving the treatment the condition of patients were observed and the herbal remedies were taken orally according to their age and weight [10]. More over a single plant is used for more than one disease for example *Abelmoschus moschatus* (urinary infection, sexual disorders) *Adathoda vasica* (respiratory disease and menstrual problems), *Aerva lanata* (body pain, control diabetes) *Azadirachta indica* (tooth pain, blood purification) *Clitoria ternatea* (Menstrual problems and wound healing) *Desmodium gangeticum* (heart disease and rheumatism). *Evolvulus alsinoides* (infertility and to improve



**Fig. 1. Some medicinal plants of Mayannur forest, Thrissur, Kerala.**  
 a) *Naregamia alata* b) *Glycosmis pentaphylla* c) *Clerodendrum infortunatum*  
 d) *Euphorbia hirta* e) *Ophiorrhiza roxburghiana* f) *Aerva lanata* g) *Biophytum sensitivum* h)  
*Saraca asoca* i) *Capsicum annum*

**Table 1. Documentation of medicinal plants used by the traditional healers of Mayannur forest, Mayannur Village, Thrissur, Kerala.**

S. No	Binomial Name	Family	Common name	Habit	Parts used	Uses
1	<i>Abelmoschus moschatus</i> L.	Malvaceae	Kasturi venda	Shrub	Leaves, Fruits, Seeds	Tea made using the leaves are used to cure urinary infection. Seeds are made into paste and mix with honey taking this daily will cure mouth ulcers and sexual disorders.
2	<i>Abrus precatorius</i> L.	Fabaceae	Kunni kuru	Shrub	Leaves, Seeds	Paste of seed is used in skin disorders. Leaves of <i>Abrus</i> is mixed in and kept in the inflamed area. A tea made of using the leaves are used against cough and cold.
3	<i>Acacia pycnantha</i> Benth.	Fabaceae	Acacia	Tree	Bark	Decoction of bark is used for mouth ulcers.
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Kadaladi	Herb	Leaves	Leaves are made into paste and used against skin diseases. Seeds of this plant are used by tribal people as gruel. Leaves of <i>Achyranthus</i> mixed with honey is used for digestive problems.
5	<i>Adathoda vasica</i> L.	Acanthaceae	Adalodakam	Herb	Leaves	Leaves are made into paste and mixed with honey and taken in empty stomach for cough and bronchitis. Leaves of <i>Adathoda</i> mix with jaggery used against menstrual problems.
6	<i>Adenanthera pavonina</i> L.	Fabaceae	Manjadi	Tree	Leaves & Bark	In traditional medicine, a decoction of the young leaves and barks used to treat diarrhoea. Also, the ground seeds are used to treat inflammation.
7	<i>Aegle marmelos</i> (L.)	Rutaceae	Koovalam	Tree	Root, Leaves, Fruits	Having Juice of leaves 10 mL daily will control diabetes, Root is made into juice and used against ear diseases, and also have healing properties. Leaves are made into paste and apply on the breast of feeding mother will prevent the child from diseases.

8	<i>Aerva lanata</i> (L.)	Amaranthaceae	Cherula	Herb	Whole plant	Boil water using <i>Aerva lanata</i> and taking bath using that water will reduce body pain. Juice of leaves mixed with milk taken daily will prevent kidney stones. Leaves are made into paste and mixed with curd, taken daily prevent diabetes.
9	<i>Ageratum conyzoides</i> L.	Asteraceae	Kumminipacha	Herb	Leaves	Oil made using the leaf is used to cure Arthritis. Leaf juice is also applied for healing wounds.
10	<i>Albizia lebbek</i> (L.) Benth	Mimosaceae	Kattuvaka	Tree	Bark	Decoction of bark is used medicinally to treat inflammation, jaundice and mouth ulcers.
11	<i>Alstonia scholaris</i> L.	Apocynaceae	Daivappala	Tree	Bark	Bark is made into paste used for skin diseases.
12	<i>Alternanthera brasiliensis</i> L.	Amaranthaceae		Herb	Leaves	Paste of leaf is used for wound healing.
13	<i>A.sessilis</i> (L)	Amaranthaceae	Ponnanganni	Herb	Leaves	Juice of leaf is used for curing eye diseases. Tribal people use the leaves for making kajal. The whole plant is used by tribes (Ulukupidutham; a mode of treatment by tribal people) in curing back pain.
14	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Mullucheera	Herb	Leaves and stem	Leaf decoction with adding a pinch of salt and used for digestion. Juice made up of tender leaves is used to increase blood count in dengue patients. Tribes make curry using the leaves without adding oil it are used for anemia. Soup made of leaves and stem are used to control cholesterol and helps in digestion.
15	<i>Amorphophallus commutatus</i> (Schott)	Arecaceae	Kattuchena	Herb	Fruit	Including the fruit in diet will control obesity, in curing piles, control blood pressure and diabetes.
16	<i>Anacardium occidentale</i> L.	Anacardiaceae	Kasu mavu	Tree	Fruit and Leaves	Fruit has anticancer activity, it is also used for vitamin C deficiency. Decoction of fruit is used for vomiting.

17	<i>Artocarpus hirsutus</i> Lam.	Moraceae	Anjili	Tree	Fruit	Fruits are used for digestive problems and it also increases sperm production.
18	<i>Artabotrys odoratissimus</i> R.Br.	Annonacea	Manoranjini	Climber	Leaves and flowers	Tea made up of leaves and root prevents cancer. Leaf decoction also used to treat cholera.
19	<i>Asystasia gangetica</i> L.	Acanthaceae	Chinese Violet	Herb	Leaves	Decoction of leaf is used for asthma.
20	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Veppu	Tree	Leaves	4-5cm long tender stem is caused in the form of tooth brush and bridging using that will cure tooth pain and cleanse the mouth. Dried leaves are made into powder and mixing it with milk it is used for blood purification. Powdered leaf mixed with turmeric is used for pimples and all skin diseases. Decoction of leaf is used to cleanse the scalp it cures dandruff problems.
21	<i>Bambusa arundinacea</i> (Retz.) Willd.	Poaceae	Mula	Tree	Bark, Root	An ointment from the root is said to be a folk remedy for cirrhosis and hard tumors, especially tumors of the abdomen, liver, spleen and stomach, Decoction of bark is mixed with honey is used for respiratory disease. Decoction of leaf is used for stimulating mensuration. Tribal people used stripes of bamboo for curing back pain.
22	<i>Biophytum sensitivum</i> DC.	Oxalidaceae	Mukkutti	Herb	Whole plant	25g of whole plant is made into paste and mixing it in coconut oil and massaging it in head helps to cure nasal polyps (small out growth in nose). The whole plant is made into paste and mixing it with milk and having it daily will help to maintain youth. Leaves made into paste and mixing it with 1 teaspoon of honey having it will help to cure while discharge in women.
23	<i>Bixa orellana</i> L.	Bixaceae	Kurannumanna l	Shrub	Leaves and Fruits	The shrub is most well known as the source of the red-orange, annatto pigment. , the plant has anticancer activity.
24	<i>Blepharis maderaspatensis</i> (L.)	Acanthaceae	Elumbotti	Herb	Leaves	It is used to treat eye disease. Juice extracted from leaf is heated with gingelly oil and applied on

						affected places to heal wound.
25	<i>Blumea axillaris</i> (Lam).DC.	Asteraceae	Kukkura	Herb	Whole plant	Whole plant is made into juice and taken orally for diarrhea.
26	<i>Boerhaavia diffusa</i> L. nom. cons	Ncytaginaceae	Thazhuthama	Herb	Whole plant	The whole plant is added in boiling water and it is used daily in empty for weight loss. The leaves are made into curry and used for constipation and anemia. 15 ml of leaf juice is taken daily for bronchitis. Whole plant is made into paste and mixed with milk and it is given to people who are addicted to alcohol. A handful of leaves are made in to juice and mixed in mother's milk and used for eye disease.
27	<i>Calotropis gigantea</i> (L.) Dryand.	Apocynaceae	Erikku	Shrub	Whole plant	2 or 3 leaves are heated and holding it tightly to the heel will cure heel pain. Leaf is made into paste and applying it to the ear to cure ear pain. A 4-5cm long stem is taken and its tip is crushed in the tooth brush and brushing using it cure tooth pain.
28	<i>Capsicum annum</i> L.	Solanaceae	Kanthari mulakku	Shrub	Fruits	Including fruits in the diet regularly will control cholesterol, heart diseases and diabetes. A drink is made using fruits, curry leaves and curd used for digestion.
29	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Karuttakunni	Herb	Whole plant	Decoction of the plant is used daily by pregnant women for normal delivery. Whole plant is made into paste and it is used by traditional people as an alternative for shampoo which helps in hair growth. A paste is made using leaf and coconut milk and applying it on hair once in a week helps in hair growth.
30	<i>Cassia fistula</i> L.	Caesalpiaceae	Kanikkonna	Tree	Leaves, Bark	Paste of leaf is used for scorpion bite. A paste made using leaf and rice water is applied on skin to treat skin diseases. Decoction of bark is used for stomach pain. Oil made using flowers are used for skin diseases.

31	<i>C. occidentalis</i> L.	Caesalpiniaceae	Kanikkonna	Shrub	Leaves	Decoction of leaf is used for curing fever in small children during the time of formation of milk teeth. Paste of leaf and castor oil used for skin diseases. Leaf is made into paste and mixing it with coconut oil and applying it daily on head and body before bath will cure headache and prevent pigmentation in skin.
32	<i>Carallia brachiata</i> Lour.	Rhizophoraceae	Varrungu	Tree	Bark	Decoction of bark is used for skin diseases. Paste of bark is used for wound healing.
33	<i>Cenchrus ciliaris</i> L.	Poaceae	Buffel grass	Herb	Leaves	Decoction of leaf is used for urinary tract infection.
34	<i>Centrosema pubescens</i> Benth.	Fabaceae	Butterfly pea	Climber	Whole plant	Decoction of whole plant is used for stomach discomfort
35	<i>Chromolaena odorata</i> (L.)	Asteraceae	Communist pacha	Shrub	Leaves ,Root	Malayalam name communist pacha is because it has healed the wounds of many comrades during the freedom fights. Root Juice mixed in milk is used for kidney stones. Taking bath in water boiled using the leaf will cure body pain in chikengunia patients. Having the decoction of leaf daily will help to maintain the pH of stomach.
36	<i>Cleome rutidospermum</i> DC.	Cleomaceae	spider flowers	Herb	Leaves	Leaf juice is used for skin diseases.
37	<i>Clerodendron infortunatum</i> L.	Verbenaceae	Perungulam	Shrub	Leaves	The tender leaves of the plant and make it into a paste and then applying it on the toe nail will cure migraine. Leaves are made into juice and mixing it with milk it's used as a medicine against snake bite.
38	<i>Chrozophora rottleri</i> L.	Euphorbiaceae	Suryavarthi	Shrub	Leaves	A paste is made using leaves and mixed with turmeric used for wound healing.
39	<i>Clitoria ternetea</i> L.	Fabaceae	Shangupushpa m	Climber	Whole plant	3g of roots are made into paste and mixed with ghee having this daily will increase brain function. Decoction of whole plant is used to treat alcohol

						addiction. A paste made up of 1 g of leaves and honey is used to treat menstrual problems. Decoction of leaf is used for wound healing. A paste made up of flowers and the flowers of <i>Saraca asoca</i> are used for heavy bleeding during menstrual cycles.
40	<i>Coccinia indica</i> Wight & Arn.	Cucurbitaceae	Kooval	Leaves & Fruits	Fruits and leaves	Eating fruits will control cholesterol and blood pressure. Leaves are used for curing ulcers.
41	<i>Commenlia bengalensis</i> L.	Commelinaceae	Kanavazhai	Herb	leaves	Paste of leaves is used for swellings. Paste of tender leaves is applied on burns.
42	<i>Crotalaria pallida</i> Aiton.	Fabaceae	Kilukki	Shrub	Seeds and leaves	Seeds are used to make shampoo which cure dandruff. Decoction of leaves is used for urine infection.
43	<i>Canthium rheedii</i> DC.	Rubiaceae	Karamullu	Shrub	Leaves	Decoction of leaves is used to prevent cancer.
44	<i>Cynadon dactylon</i> L.	Poaceae	Karuka	Herb	Whole plant	Whole plant is made in to paste and holding this in to the wound will stop bleeding.
45	<i>Cyclea peltata</i> Arn.	Menispermaceae	Padathali	Climber	Leaves and tuber	Decoction of leaves and tuber are used for Kidney stones. Oil made using leaves is used for hair growth. Paste of leaves is used for snake bite. Decoction of leaves is used for fever.
46	<i>Datura stramonium</i> L.	Solanaceae	Ummam	Shrub	Leaves and Flowers	A paste of leaves mixed in Coconut oil is applied on scalp for treating dandruff. Decoction of leaves and flowers are used for bronchitis. Paste made up of fruit, flowers and turmeric is applied for any kinds of pain or inflammation in breast. Decoction of leaves is used for menstrual pain.
47	<i>Desmodium gingeticum</i> L. (DC).	Fabaceae	Oorila	Shrub	Root	Root juice mixed with curd us used to cure blood in stool. Root paste applied for scorpion bites. Root juice mixed with milk is used daily to prevent heart disease. Decoction of root used for rheumatism. Root juice mixed in honey is used to prevent white discharge in women.

48	<i>Duranta erecta</i> L.	Verbenaceae	Chebazhukka	Shrub	Fruits	Decoction of fruits is used for malaria.
49	<i>Eclipta prostrata</i> (L.)	Asteraceae	Kannunni	Herb	Whole plant	Decoction of whole plant (Marcarasayanam) used for skin diseases. Decoction is also used for jaundice and liver disease. 10g of whole plant is made into paste and oil is made by mixing in 1 litre of coconut oil. Using this daily will prevent eye disease, headache and increase hair growth.
50	<i>Eleusine indica</i> (L.)	Poaceae	Kattuthina	Herb	Whole plant	Tea made by the leaves is used for ovarian cysts. Having the decoction of whole plant daily will increase the amount of water in body and expels salt as urine. Holding the heated leaves tightly to the inflamed part will cure inflammation. Applying the juice of leaves in wounds will stop bleeding from wounds. Drinking the boiled leaves cure urinary tract infection.
51	<i>Eucalyptus globulus</i> Labill.	Myrtaceae	Eucali	Tree	Leaves	<i>Eucalyptus</i> oil is made by crushing the leaves and mixing it in oil and keeping it under sun for 10 days. Inhaling this oil prevent migraine, Stress, and anxiety. Applying this oil will also cure joint pain.
52	<i>Eranthemum pulchellum</i> L.	Acanthaceae	Neelamulla	Herb	Root	Decoction of the root is used for ulcers.
53	<i>Evolvulus alsinoides</i> L.	Convolvulaceae	Vishnukranti	Climber	Whole plant	Decoction of root is used for fever. Whole plant is mixed with milk and ghee used for infertility. Whole plant mixed in milk and having this for 48 days improves brain functioning. Decoction of whole plant is used to control diabetes. Having 2g of whole plant improved functioning of nervous system. Decoction of whole plant is used for stomach pain.
54	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Murikooti	Herb	Whole plant	It is often used traditionally for female disorders. 5 g of leaves are made into juice and applying it on teeth using a cotton to cure tooth pain. Latex from the stem is used for pimples. Juice of leaves

						mixed in curd is used as face mask. Leaves juice are mixed with curd and having it daily will prevent white discharge in women.
55	<i>Ficus hispida</i> L.f.	Moraceae	Parakam	Tree	Leaves	Having a mixture of leaf juice and milk will increase milk in lactating women. Mixture of leaf and gum is used for leprosy. A paste is made using the leaf and leaf of Datura and it's mixed in rice water and used for Rabies.
56	<i>Glycyrrhiza glabara</i> (L).	Fabaceae	Irattimaduram	Tree	Root	Root extracts of mulethi aids in increasing the production of lymphocytes and macrophage thereby improving your defense mechanism & powder if root is used for curing dandruff.
57	<i>Gloriosa superba</i>	Liliaceae	Menthoni	Climber	Tuber	Paste of tuber is used for skin diseases. A paste made using tuber and leaves is applied on throat for itching in throat.
58	<i>Glycosmis pentaphylla</i> (Retz.) DC	Rutaceae	Kuttuppanal	Shrub	Root , leaves	Extract of root bark have been shown to exhibit significant activity in treatment of diarrhoea. Adding a handful of leaves to boiling water and taking bath with that water will reduce body pain.
59	<i>Gomphrena serrata</i> L.	Amaranthaceae	Globe Amaranth	Shrub	Leaves	More effective against diarrhea, heavy fever, pains, carminative, bronchial asthma, diabetes, and dermatitis.
60	<i>Hibiscus sabdariffa</i> L.	Malvaceae	Pulivenda	Shrub	Flowers	Consumption of tea made using petals daily reduce hypertension.
61	<i>Holigarana arnottiana</i> Wall.	Anacardiaceae	Karincher	Tree	Seeds	Seeds are used to treatment inflammation, arthritis, hemorrhoids, obesity, tumor, cancer, leaves and its latex cause allergy.
62	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	Kutakappaala	Tree	Leaves	To check blood coming from stool, paste of leaves are given with castor oil. According to Ayurveda, the bark is useful in treatment of piles, skin diseases and biliousness.
63	<i>Holoptelea integrifolia</i> (Roxb.) Planch	Ulmaceae	Aaval	Tree	Bark	The bark is boiled and squeezed out and applied for rheumatic swellings.

64	<i>Hyptis suaveolens</i> L.	Lamiaceae	Ganga tulasi	Herb	Root and leaves	A decoction of the roots is valued as an appetizer. A decoction of the root is said to be emmenagogic, and a stimulant if employed in rheumatism. Seeds are used to make a refreshing drink using lemon.
65	<i>Ichnocarpus frutescens</i> (L.) <u>W.T.Aiton</u>	Apocynaceae	Palvalli	Climber	Whole plant	Decoction of whole plant is used for Cough, dysentery.
66	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Convolvulaceae	Thiruthali	Climber	Whole plant	Root bark is used as purgative, whole plant is used for snake bite.
67	<i>Kyllinga bulbosa</i> Beauv.	Cyperaceae	Velutta nirvasi	Herb	Whole plant	A decoction of the whole plant is used as a treatment against a variety of complaints including malaria; colds with fever; whooping cough; bronchitis; swelling pain in the throat.
68	<i>Lantana camara</i> L.	Verbenaceae	Arippu	Shrub	Root	Decoction of fresh root is used for dysentery.
69	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thumba	Herb	Whole plant	Decoction of whole plant cure malarial fever, Juice of leaves are applied to skin to treat skin diseases and swelling.
70	<i>Macaranga peltata</i> Roxb.	Euphorbiaceae	Vatta	Tree	Leaves	Leaves are used to make a food called "Ada" before rainy season which helps to prevent all the disease during the rainy season and also boosts immunity. Decoction made of bark is used to cure cough and fever. Chewing a tender leaf daily helps to increase immunity. Washing the wounds using the decoction of leaves helps to heal the wounds fast.
71	<i>Mallotus philippensis</i> (Lam.)	Euphorbiaceae	Cenkolli	Tree	Leaves	Leaf of juice mixed in cured is used to cure digestive problems. Leaf is made into paste and applied on skin to cure skin disease.
72	<i>Mimosa pudica</i> L.	Mimosaceae	Thottavadi	Herb	Whole plant	Paste of whole plant is used for wound healing. Having the decoction of leaves daily in the morning control diabetes. 5ml of juice mixed in

						tender coconut water is used to cure asthma in children. Whole plant is made into a paste and then mixed with honey is used for heavy bleeding during menstrual cycle.
73	<i>Mikania micrantha</i> Kunth	Asteraceae	Bitter vine	Climber	Leaves	Paste of leaf is used for insect bites and also for wound healing.
74	<i>Momordica charantia</i>	Cucurbitaceae	Pavakka	Climber	Leaves and Fruits	Handful of tender leaves are chopped and boiled in 2 glass of water and having this daily can control diabetes. Decoction of leaves can also cure menstrual problems. Having the in diet also control diabetes.
75	<i>Mollugo nudicaulis</i> Lam.	Molluginaceae	Parpadakapullu	Herb	Whole plant	They are used for sprue and mouth infections. In India, the whole plant is used as a mild laxative medicine, also as stomachic, antiseptic and emmenagogue. In China, it is made into a soup to promote appetite, while a decoction of the roots is used to treat eye diseases.
76	<i>Morinda tinctoria</i> Roxb.	Rubiaceae	Manjapavitta	Tree	Leaves	Juice of leaves are applied externally to relieve pain.
77	<i>Mussaenda glabarata</i> L.	Rubiaceae	Vellila	Shrub	Leaves	Decoction of tender leaves and roots are used for Kidney disease. Decoction of white leaves is used for asthma. Paste made using green leaves is used for hair growth.
78	<i>Naregamia alata</i> Wight & Arn.	Rutaceae	Nilanarakam	Herb	Whole plant	Whole plant is made into juice and applied on head daily before bath can cure migraine.
79	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	Parpadakapullu	Herb	Whole plant	Juice of whole plant is used to treat menstrual problems. Juice of whole plant mixed with turmeric is used for fever in children.
80	<i>Parietaria officinalis</i> L.	Urticaceae	Pellitory of wall	Herb	Whole plant	The whole plant is administered in the form of infusion as diuretic, cholagogue, emollient, healing and soothing. The herbal tea is recommended against cold, cough, sore throat and rheumatism.

81	<i>Passiflora foetida</i> L.	Passifloraceae	Poochapalam	Climber	Leaves	Juice of leaves are applied in wounds, Decoction of leaves cure anxiety and sleep problems.
82	<i>Peperomia pellucida</i> Kunth .	Piperaceae	Mashithand	Herb	Whole plant	Whole plant is made into juice and having this daily in empty stomach will prevent kidney disorders. Juice made with the whole plant is used as a refreshing drink during summer. Leaves are made into paste and applied on inflamed area and also as a pain killer. Leaf decoction also used for cholesterol.
83	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Nelli	Tree	Fruits	A juice is made using fruits and it is mixed with turmeric and having this daily will control diabetes. Fruit is dried under sun and it is made into a powder, washing hair using this powder will prevent hair fall and increase hair growth. Fruit juice mixed in jaggery used for joint pain. A paste made using fruit and honey applied in eyes to cure eye diseases. Boiled water made using fruit and ginger and this daily in empty stomach will help in weight loss. Having a fruit daily will cure mouth ulcers and gives pink colour to lips.
84	<i>P. niruri</i> L.	Phyllanthaceae	Kizharnelli	Herb	Whole plant	Whole plant is washed and made into pieces and adding it to boiling sesame oil and massaging the head with that oil can cure migraine. Having the decoction of plant daily will help to control diabetes. Handful of leaves is made into paste and mixing it with ghee and having it during the time of periods will reduce heavy bleeding. Paste of plant mixed with turmeric is used to cure sores.
85	<i>P. urinaria</i> L.	Phyllanthaceae	Chirukizhukanelli	Herb	Fruit	Decoction of fruits is used in folk medicine to treat jaundice, diabetes, malaria, and liver diseases.
86	<i>Poa pratensis</i> L.	Poaceae	Blue grass	Herb	Leaves	Decoction of leaves are used for urinary tract infection.

87	<i>Pongamia pinnata</i> L.	Fabaceae	Ungu	Tree	Flowers	Decoction of flower is used for blood pressure. Water is made by adding two teaspoons of power of dried flowers, turmeric powder, fenugreek powder boiling it for 5-7 minutes and having this daily in empty stomach can control diabetes.
88	<i>Psidium guajava</i> L.	Myrtaceae	Pera	Tree	Leaves and Fruits	Having a fruit daily provides glowing skin, increase hair growth, strong teeth, boost immunity. Tea is made using tender leaves and having this daily will control diabetes. Water boiled using the tender leaves and steaming using that water cure tooth pain. Water boiled using tender leaves is used for diarrhea.
89	<i>Premna integrifolia</i>	Verbenaceae	Munja	Shrub	Leaves	Leaves are boiled in water and taking bath in this water cure fever in children. Having 5 leaves daily will cure ulcer.
90	<i>Pulicaria vulgaris</i> Gaertn.	Asteraceae	False fleabane	Shrub	Whole plant	Decoction of root is used for dysentery . Paste of the plant applied externally to wounds.
91	<i>Quisqualis indica</i> L.	Combretaceae	Thookuchethi	Climber	Root	Decoction of the root is used to treat rheumatism and a concentrated decoction of the fruit is used as a gargle effective against toothache.
92	<i>Rauwolfia serpentina</i> L.	Apocynaceae	Sarpaganthi	Shrub	Whole plant	1g of root decoction is used for snake bites. Chewing the roots prevent heart disease. Leaves are made into paste and mixed in vinegar applied for skin diseases. Root juice is also used for nervous problem.
93	<i>Ruellia prostrata</i> Poir.	Acanthaceae	Thuppalpotty	Herb	Whole plant	Decoction of whole plant is used for diabetes.
94	<i>Santalum album</i> L.	Santhalaceae	Chadanam	Tree	Whole plant	It is used for treating the common cold, cough, bronchitis, fever, and sore mouth and throat. It is also used to treat urinary tract infections (UTIs), liver disease, gallbladder problems, heatstroke, gonorrhea, headache, and conditions of the heart and blood vessels (cardiovascular disease).

95	<i>Saraca asoca</i> (Roxb). Wild.	Fabaceae	Ashokam	Tree	Whole plant	According to traditional medicine even seeing the tree will reduce stress and sitting under the shelter of the tree will reduce our sorrows. A paste is made using flowers rice powder and jaggery it's used for menstrual problems and it also purifies the blood. Paste if flowers are also used for skin diseases. Decoction of flowers and bark is used from 1-4 days if periods to cure all the pain during periods. Seeds are powdered and mixed in tender coconut water for urine infections.
96	<i>Scoparia dulcis</i> L.	Scopariaceae	Kallurikki	Herb	Whole plant	Paste of whole plant mixed in tender coconut water and having this daily for 1 week will cure Kidney stones. Paste of leaves is also used for wound healing.
97	<i>Sida acuta</i> Burm.f..	Malvaceae	Kurumthotti	Herb	Whole plant	Whole plant is boiled in 2 L of water it's used for rheumatism and body pain. Juice of whole plant mixed with milk is used to control blood pressure.
98	<i>Stachytarpheta indica</i> (L.) Vahl.	Verbenaceae	Seemakogini	Herb	Whole plant	Decoction of whole plant is used for diabetes. Tea made by using leaves is used for fever. Paste of whole plant is used for wound healing.
99	<i>Strychnos nux vomica</i> L.	Loganiaceae	Kajiram	Tree	Seeds	Seeds are used only after purification; it is done by keeping the seeds in milk for 7 days and then drying it under sun for 7 days. Seeds are powdered and used for diabetes, piles, arthritis and headache. Leaves are made into paste and mixed in ghee and used for skin diseases.
100	<i>Stereospermum colais</i> DC.	Bignoniaceae	Puupathiri	Tree	Whole plant	Decoction of whole plant is used for fever.
101	<i>Synedrella nodiflora</i> (L.) Gaertn		Mudiyendrapac ha	Herb	whole plant	The plant is traditionally used by some Ghanaian communities to treat epilepsy. It has anticonvulsant and other neuropharmacological effects of a hydro-ethanolic extract of the whole plant using murine models.

102	<i>Syzygium cuminii</i> L.	Myrtaceae	Njaval	Tree	Bark	Decoction of bark is used to control diabetes. Seeds are powdered and used for diabetes. Having the fruits daily cure digestive problems urinary tract infection, control blood pressure, provide strong teeth prevent heart disease and increase haemoglobin in blood.
103	<i>Tecoma stans</i> (L.) Juss. Kunth	Bignoniaceae	Vishnukiridam	Tree	Leaves	Tea made using leaves are used for treatment of diabetes, digestive problems.
104	<i>T. grandis</i> L.f.	Lamiaceae	Teak	Tree	Flowers and leaves	Decoction of flowers is used for bronchitis and menstrual problems. Water boiled using the leaves are used throat infection. Decoction of whole plant is used for diabetes.
105	<i>Tinospora cordifolia</i> Thunb.	Menispermaceae	Chittamruth	Climber	Bark	Bark is made into juice and it is mixed with honey used for fever. 15ml of decoction of whole plant is used for Kidney disorder. A paste is made using whole plant, leaves of <i>Phyllanthus niruri</i> , root of <i>Boerhaavia diffusa</i> are used for rheumatic fever.
106	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Pigweed	Herb	whole plant	Decoction of whole plant is used for anemia and stomach diseases.
107	<i>Vernonia cinerea</i> (L.) H. Rob.	Asteraceae	Puvankurunal	Herb	Whole plant	Decoction of whole plant is used for blood purification, malaria and eye diseases. Traditional people make a kajal by making a juice if whole plant and dipping a cotton cloth in it then burning the cloth and collecting that smoke using a clay pot and then mixing that ash in coconut oil applying the kajal will cure eye diseases. Oil made using whole plant is used for hair growth.

functioning of nervous system). *Macaranga peltata* (fever and wound healing) *Phyllanthus emblica* (control diabetes, eye diseases, mouth ulcers). *Rauwolfia Serpentina* (Snake bite and nervous problems). *Saraca asoca* (reduce stress and for menstrual problems). *Tinospora cordifolia* (Kidney disorders and fever). *Vernonia cinerea* (hair growth and malaria). *Abrus precatorious*, *Ichnocarpus frutescens*, *Adathoda vasica*, *Parietaria officinalis* were used for treating common cold. The plants used to treat menstrual problems were *Adathoda vasica*, *Clitoria ternetea*, *Datura stramonium*, *Mimosa pudica*, *Oldenlandia corymbosa*, *Saraca asoca*. Most of the medicinal formulations were documented for the first time. The traditional healers used herbal remedies to treat common minor diseases and even some major diseases like malarial fever, cancer, kidney disorders, skin diseases and wound healing.

Plants are mainly used in the form of decoction and paste. Some plants like *Strychnos nux vomica* seeds were used only after a long process of purification for seven days. (Morvin Yabesh *et al.*, [11], Savithramma *et al.*, [12] reported that the herbal formulations include decoction (48%) paste (26%), juice (18%), and tea (8%), whereas decoction is obtained more when compared to other formulations. *Saraca asoca* Roxb De Wilde., which is an endangered tree according to IUCN (2011) has identified to have many medicinal uses like reducing stress and for menstrual disorders. Sandeep Rout *et al.*, [13] studied and reported that, owing to its greater demand for the bark, and for its shortage, it is adulterated with bark of *polyalthia longifolia*. Among the 107 plant species many plants were divided into various categories of RET (Rare Endangered Threatened) were identified. Those which need urgent conservation were noted and collected for herbarium preservation. The medicinal use of plants in Mayannur forest has not been documented until the performance of present study.

#### 4. CONCLUSION

The present study was carried out in Mayannur Forest, Kerala and documented 107 plant species belonging to 46 families. In recent days there is a hindrance in the transfer of traditional knowledge from generation to generation. So the knowledge about medicinal plants, traditional healers and their uses were highly important. This documentation study helped for the conservation of endangered plant

species and for the identification of medicinal plants.

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